HEALTH AND SAFETY PLAN APPROVAL/SIGNOFF FORM

Site Name: Sybill, Inc. | **WO#:** 12634-001-001-0309-00

Address:
111 Military St., Detroit, MI

I understand, agree to, and will conform with the information set forth in this Health and Safety Plan (and attachments) and discussed in the personnel health and safety briefing(s).

Name	Signature	Date
SARAH MEYER	[signature]	10/21/02
Dan Capone	Daniel M. Capone	10/22/02
RAY MOTTER	[signature]	10/22/02
Jim Ferritto	[signature]	10/22/02
[illegible]	[signature]	10/22/02
Jeff [illegible]	[signature]	10/22/02
Linda Korolko	[signature]	10/22/02
Lorie Hong	[signature]	7/25/03

Revised 02/1998

SITE HEALTH AND SAFETY PLAN (HASP) FORM

Prepared by: Rebecca Campbell Nemirovsky

W.O. Number: 12634-001-001-0309-00 **Date:** 10-01-02

Project Identification

Office: Detroit
Site Name: Sybill Inc.
Client: U.S. EPA Reg V START
Work Location Address: 111 Military Road, Detroit, Michigan

Site History:

The Sybill Inc. facility is an abandoned waste-oil recycling facility. There are approximately 400,000 gallons of waste-oil remaining at the facility. In addition, other materials including acids, bases, sodium hypochlorite, hydrogen peroxide, more than 50 55-gallon drums containing unknown substances, cylinders labeled hydrogen, nitrogen, oxygen, and propane, and containers labeled "flammable" and "PCBs", are present at the site. Many areas of the facility, including process buildings, show signs of forced entry and trespass.

Scope of Work:

Site Assessment including sample collection from on-site tanks, drums, and miscellaneous containers.

☐ Sites visit only; site HASP not necessary. List personnel here and sign off below:

Regulatory Status:

Site regulatory status:

CERCLA/SARA	RCRA	Other Federal Agency
☒ U.S. EPA	☐ U.S. EPA	☐ DOE
☒ State	☐ State	☐ USACE
☐ NPL Site	NRC	☐ Air Force
☐ OSHA	☐ 10 CFR 20	☐ _____

Hazard Communication (Req'd See Attachment D)
☒ 1910 ☒ 1926 ☒ State

Safety Officer Manual (Required to be On-Site)

Based on the Hazard Assessment and Regulatory Status, determine the Standard HASP(s) applicable to this project. Indicate below which Standard HASP will be used and append the appropriate pages of this form along with the Standard Plan.

☐ Stack Test	☐ _____
☐ Air Emissions	☐ _____
☐ Asbestos	☐ _____
☐ Industrial Hygiene	☐ _____
☐ _____	☐ _____

Review and Approval Documentation:

Reviewed by:
SO/DSM/CHS: SARAH MEYER FOR RON BUGG (Name (Print)) _____ (Signature) Date: 10/16/02

Other: _____ (Name (Print)) _____ (Signature) Date: _____

Approved by:
Project Manager: KEVIN AXE (Name (Print)) _____ (Signature) Date: 10/18/02

Hazard Assessment and Equipment Selection:

In accordance with WESTON's Personal Protective Equipment Program and 29 CFR 1910.132, at the site prior to personnel beginning work, the SHSC and/or the Site Manager have evaluated conditions and verified that the personal protective equipment selection outlined within this HASP is appropriate for the hazards known or expected to exist. (Refer to Safety Officer Manual Section 2, Personal Protection Program, for guidance.)

☒ SHSC ☐ Site Manager Sarah L. Meyer (Name (Print)) _____ (Signature) Date: 10/16/02

Project start date: 10/21/02 End date: 01/01/03	This site HASP must be reissued/reapproved for any activities conducted after: Date: 03/01/03	Amendment date(s) By: 1. 2. 3. 4.

SITE HEALTH AND SAFETY PLAN (HASP) FORM 1

Prepared by: Rebecca Campbell Nemirovsky

W.O. Number: 12634-001-001-0309-00 **Date:** 10-01-02

Project Identification

Office: Detroit
Site Name: Sybill Inc.
Client: U.S. EPA Reg V START
Work Location Address: 111 Military Road, Detroit, Michigan

Site History:

The Sybill Inc. facility is an abandoned waste-oil recycling facility. There are approximately 400,000 gallons of waste-oil remaining at the facility. In addition, other materials including acids, bases, sodium hypochlorite, hydrogen peroxide, more than 50 55-gallon drums containing unknown substances, cylinders labeled hydrogen, nitrogen, oxygen, and propane, and containers labeled "flammable" and "PCBs", are present at the site. Many areas of the facility, including process buildings, show signs of forced entry and trespass.

Scope of Work:

Site Assessment including sample collection from on-site tanks, drums, and miscellaneous containers.

☐ Sites visit only; site HASP not necessary. List personnel here and sign off below:

Regulatory Status:

Site regulatory status:

CERCLA/SARA	RCRA	Other Federal Agency
☒ U.S. EPA	☐ U.S. EPA	☐ DOE
☒ State	☐ State	☐ USACE
☐ NPL Site	NRC	☐ Air Force
☐ OSHA	☐ 10 CFR 20	☐ _____

Hazard Communication (Req'd See Attachment D)
☒ 1910 ☒ 1926 ☒ State

Safety Officer Manual (Required to be On-Site)
Based on the Hazard Assessment and Regulatory Status, determine the Standard HASP(s) applicable to this project. Indicate below which Standard HASP will be used and append the appropriate pages of this form along with the Standard Plan.

☐ Stack Test	☐ _____
☐ Air Emissions	☐ _____
☐ Asbestos	☐ _____
☐ Industrial Hygiene	☐ _____
☐ _____	☐ _____

Review and Approval Documentation:

Reviewed by:
SO/DSM/CHS _____ Date: _____
Name (Print) Signature

Other _____ Date: _____
Name (Print) Signature

Approved by:
Project Manager _____ Date: _____
Name (Print) Signature

Hazard Assessment and Equipment Selection:

In accordance with WESTON's Personal Protective Equipment Program and 29 CFR 1910.132, at the site prior to personnel beginning work, the SHSC and/or the Site Manager have evaluated conditions and verified that the personal protective equipment selection outlined within this HASP is appropriate for the hazards known or expected to exist. (Refer to Safety Officer Manual Section 2, Personal Protection Program, for guidance.)

☒ SHSC ☐ Site Manager Sarah L. Meyer Date: _____
Name (Print) Signature

Project start date: 10/21/02 End date: 01/01/03	This site HASP **must be reissued/reapproved** for any activities conducted after: Date: 03/01/03	Amendment date(s) By: 1. 2. 3. 4.

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WESTON REPRESENTATIVES-FORM 2

Organization/Branch	Name/Title	Address	Telephone
Weston/Chicago	Sarah Meyer Site Lead/Sampler	Chicago, IL	(312)424-3303
Weston/Detroit	Rebecca Nemirovsky Sampler/SHSC	Detroit, MI	(313) 989-2534
Weston/Okemos	Dan Capone Sampler/Level B Supervisor	Okemos, MI	517-381-5932

Roles and Responsibilities: Sarah Meyer is responsible for site coordination, sample plan implementation and sampling and implementation of this HASP.

WESTON SUBCONTRACTORS

Organization/Branch	Name/Title	Address	Telephone
None			

Roles and Responsibilities:

SITE-SPECIFIC HEALTH AND SAFETY PERSONNEL

The Site Health and Safety Coordinator (SHSC) for activities to be conducted at this site is: Sarah Meyer

The SHSC has total responsibility for ensuring that the provisions of this Site HASP are adequate and implemented in the field.

Changing field conditions may require decisions to be made concerning adequate protection programs. Therefore, the personnel assigned as SHSCs are experienced and meet the additional training requirements specified by OSHA in 29 CFR 1910.120.

Qualifications: Rebecca Nemirovsky and Sarah Myer are current in first aid and CPR, 40-hour OSHA, and 8-hr SHSC training Both START members are experienced in Level B PPE. The OSC on site will be used as the backup personnel on site. A "Three Person (minimum) entry" (including backup personnel) is required. All level B and C documentation will be available for review by per request. This documentation is available in personnel folder. Rebecca is a transfer from Region Region 3 and has ER/START experience.

Designated alternates include:

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HEALTH AND SAFETY EVALUATION FORM 3

Hazard Assessment

Background Review: ☒ Complete ☐ Partial If partial why?

Activities Covered Under This Plan:

No.	Task/Subtask	Description	Schedule
01	Initial Assessment	Facility reconnaissance and air monitoring	Immediately upon arrival.
02	Sampling	Tank sampling	TBD (10/21/02 – 10/23/02
03	Sampling	Acid/Caustic AST	TBD (10/21/02 – 10/23/02
04	Sampling	Drum sampling	TBD (10/21/02 – 10/23/02)
05	Sampling	Miscellaneous container sampling	TBD (10/21/02 – 10/23/02)

Types of Hazards:

1 Numbers refer to one of the following hazard evaluation forms. Complete hazard evaluation forms for each appropriate hazard class.

Physiochemical 1

- ☒ Flammable
- ☒ Explosive
- ☒ Corrosive
- ☒ Reactive
- ☐ O_2 Rich
- ☐ O_2 Deficient

Chemically Toxic 1

- ☒ Inhalation ☐ Carcinogen
- ☐ Ingestion ☐ Mutagen
- ☒ Contact ☐ Teratogen
- ☒ Absorption

☐ OSHA 1910.1000 Substance (Air Contaminants)

☐ OSHA Specific Hazard Substance Standard (Refer to following page for listing)

Radiation 3

Ionizing:

- ☐ Internal exposure
- ☐ External exposure

Non-ionizing:

- ☒ UV ☐ IR
- ☐ RF ☐ MicroW
- ☐ Laser

Biological 2

- ☐ Etiological Agent
- ☒ Other (plant, insect, animal)

☐ **Physical Hazards 4**

☐ Construction Activities

Source/Location of Contaminants and Hazardous Substances:

Directly Related to Tasks

- ☒ Air
- ☒ Other Surface
- ☐ Groundwater
- ☒ Soil
- ☐ Surface Water
- ☐ Sanitary Wastewater
- ☒ Process Wastewater
- ☒ Other Drums and tanks

Indirectly Related to Tasks — Nearby Process(es) That Could Affect Team Members:

- ☐ Client Facility/WESTON Work Location
- ☐ Nearby Non-Client Facility

Describe:

- ☐ Have activities (task[s]) been coordinated with facility?

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HEALTH AND SAFETY EVALUATION-CHEMICAL HAZARDS OF CONCERN-FORM 4

☐ N/A

Chemical Contaminants of Concern

Provide the data requested for chemical contaminants on HASP Form 25 or attach data sheets from an acceptable source such as NIOSH pocket guide, condensed chemical dictionary, ACGIH TLV booklet, etc. List chemicals and concentrations below and locate data sheets in Attachment B of this HASP.

☐ N/A

Identify hazardous materials used or on-site and attach Material Safety Data Sheets (MSDSs) for all reagent type chemicals, solutions, or other identified materials that in normal use in performing tasks related to this project could produce hazardous substances. Ensure that all subcontractors and other parties working nearby are informed of the presence of these chemicals and the location of the MSDSs. Obtain from subcontractors and other parties, lists of the hazardous materials they use or have on-site and identify location of the MSDSs here. List chemicals and quantities below and locate MSDSs in Attachment B of this HASP.

Chemical Name	Concentration (if known)	Chemical Name	Quantity
Waste oil	Unknown	Alconox	< 1 Liter
PCBs (unlikely)	Unknown	HCl	< 1 Liter as sample preservative.
sodium hypochlorite	Unknown	HNO_3	< 1 Liter as sample preservative.
hydrogen peroxide	Unknown	Isobutylene: calibration grade	< 17 Liters
Acids	Unknown	Compressed air	< 100 Liters
Bases	Unknown		
Hydrogen	Unknown		
Nitrogen	Unknown		
Oxygen	Unknown		
Propane	Unknown		

OSHA-SPECIFIC HAZARDOUS SUBSTANCES

The following substances may require specific medical, training, or monitoring based on concentration or evaluation of risk. See the appropriate citation listed under 29 CFR 1910 or 1926 for additional information.

- ☐ 1910.1001 Asbestos
- ☐ 1910.1002 Coal tar pitch volatiles
- ☐ 1910.1003 4-Nitrobiphenyl, etc.
- ☐ 1910.1004 alpha-Naphthylamine
- ☐ 1910.1005 [Reserved]
- ☐ 1910.1006 Methyl chloromethyl ether
- ☐ 1910.1007 3,3'-Dichlorobenzidine (and its salts)
- ☐ 1910.1008 bis-Chloromethyl ether
- ☐ 1910.1009 beta-Naphthylamine
- ☐ 1910.1010 Benzidine
- ☐ 1910.1011 4-Aminodiphenyl
- ☐ 1910.1012 Ethyleneimine
- ☐ 1910.1013 beta-Propiolactone
- ☐ 1910.1014 2-Acetylaminofluorene
- ☐ 1910.1015 4-Dimethylaminoazobenzene
- ☐ 1910.1016 N-Nitrosodimethylamine
- ☐ 1910.1017 Vinyl chloride
- ☐ 1910.1018 Inorganic arsenic
- ☐ 1910.1025 Lead (Att. FLD# 46)
- ☐ 1910.1027 Cadmium
- ☐ 1910.1028 Benzene
- ☐ 1910.1029 Coke oven emissions
- ☐ 1910.1043 Cotton dust
- ☐ 1910.1044 1,2-Dibromo-3-chloropropane
- ☐ 1910.1045 Acrylonitrile
- ☐ 1910.1047 Ethylene oxide
- ☐ 1910.1048 Formaldehyde
- ☐ 1910.1050 Methylenedianiline
- ☐ 1910.1051 1,3 Butadiene
- ☐ 1910.1052 Methylene chloride

Comments: NO pressurized cylinders will be sampled. Information on the cylinder will be documented and photos will be collected.

Revised 02/1998

HEALTH AND SAFETY EVALUATION-2 BIOLOGICAL HAZARDS OF CONCERN-FORM 5

☒ **Poisonous Plants** (FLD 43)

Location/Task No(s).: Exterior of buildings/01, 02

Source: ☐ Known ☒ Suspect

Route of Exposure: ☐ Inhalation ☐ Ingestion ☒ Contact ☐ Direct Penetration

Team Member(s) Allergic: ☐ Yes ☒ No

Immunization required: ☐ Yes ☒ No

☒ **Insects** (FLD 43)

Location/Task No(s).: Exterior of buildings/ 01, 02

Source: ☐ Known ☒ Suspect

Route of Exposure: ☐ Inhalation ☐ Ingestion ☐ Contact ☐ Direct Penetration

Team Member(s) Allergic: ☐ Yes ☒ No

Immunization required: ☐ Yes ☒ No

☒ **Snakes, Reptiles** (FLD 43)

Location/Task No(s).: Site/all task

Source: ☐ Known ☒ Suspect

Route of Exposure: ☐ Inhalation ☐ Ingestion ☐ Contact ☐ Direct Penetration

Team Member(s) Allergic: ☐ Yes ☒ No

Immunization required: ☐ Yes ☒ No

☒ **Animals** (FLD 43)

Location/Task No(s).:Site/all task

Source: ☐ Known ☒ Suspect

Route of Exposure: ☐ Inhalation ☐ Ingestion ☐ Contact ☐ Direct Penetration

Team Member(s) Allergic: ☐ Yes ☒ No

Immunization required: ☐ Yes ☒ No

FLD 43 — WESTON Biohazard Field Operating Procedures: Att. OP ☐

☐ **Sewage**

Location/Task No(s).:

Source: ☐ Known ☐ Suspect

Route of Exposure: ☐ Inhalation ☐ Ingestion ☐ Contact ☐ Direct Penetration

Team Member(s) Allergic: ☐ Yes ☐ No

Immunization required: ☐ Yes ☐ No

Tetanus Vaccination within Past 10 yrs: ☐ Yes ☐ No

☐ **Etiologic Agents (List)**

Location/Task No(s).:

Source: ☐ Known ☐ Suspect

Route of Exposure: ☐ Inhalation ☐ Ingestion ☐ Contact ☐ Direct Penetration

Team Member(s) Allergic: ☐ Yes ☐ No

Immunization required: ☐ Yes ☐ No

FLD 44 — WESTON Bloodborne Pathogens Exposure Control Plan – First Aid Procedures: Att. OP ☒

FLD 45 — WESTON Bloodborne Pathogens Exposure Control Plan – Working with Infectious Waste: Att. OP ☐

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HEALTH AND SAFETY EVALUATION-3 RADIATION HAZARDS OF CONCERN-FORM 6

NONIONIZING RADIATION

Task No.	Type of Nonionizing Radiation	Source On-Site	TLV/PEL	Wavelength Range	Control Measures	Monitoring Instrument
01-05	Ultraviolet	sunlight			Proper PPE and sunscreen	
	Infrared					
	Radio Frequency					
	Microwave					
	Laser					

IONIZING RADIATION

Task No.	Radionuclide	Major Radiations	Radioactive Half-Life (Years)	DAC (µCi/mL)			Surface Contamination Limit	Monitoring Instrument
				D	W	Y		

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HEALTH AND SAFETY EVALUATION 4 PHYSICAL HAZARDS OF CONCERN FORM 7

Phy. Haz. Cond.	Physical Hazard	Attach OP	WESTON OP Titles
Loud noise	Hearing loss/disruption of communication	☐	FLD01 - Noise Protection
Inclement weather	Rain/humidity/cold/ice/snow/lightning	☒	FLD02 - Inclement Weather
Steam heat stress	Burns/displaced oxygen/wet working surfaces	☐	FLD03 - Hot Process – Steam
Heat stress	Burns/hot surfaces/low pressure steam	☐	FLD04 - Hot Process - LT3
Ambient heat stress	Heat rash/cramps/exhaustion/heat stroke	☒	FLD05 - Heat Stress Prevention/Monitoring
Cold stress	Hypothermia/frostbite	☒	FLD06 - Cold Stress
Cold/wet	Trench/paddy/immersion foot/edema	☐	FLD07 - Wet Feet
Confined spaces	Falls/burns/drowning/engulfment/electrocution	☐	FLD08 - Confined Space Entry
Explosive vapors	Thermal burns/impaction/dismemberment	☐	FLD09 - Hot Work
Improper lifting	Back strain/abdomen/arm/leg muscle/joint injury	☐	FLD10 - Manual Lifting/Handling Heavy Objects
Uneven surfaces	Vehicle accidents/slips/trips/falls	☒	FLD11 - Rough Terrain
Poor housekeeping	Slips/trips/falls/punctures/cuts/fires	☒	FLD12 – Housekeeping
Structural integrity	Crushing/overhead hazards/compromised floors	☒	FLD13 - Structural Integrity
Hostile persons	Bodily injury	☒	FLD14 - Site Security
Remote area	Slips/trips/falls/back strain/communication	☐	FLD15 - Remote Area
Improper cyl. handling	Mechanical injury/fire/explosion/suffocation	☒	FLD16 - Pressure Systems - Compressed Gases
Water hazards	Poor visibility/entanglement/drowning/cold stress	☐	FLD17 – Diving
Water hazards	Drowning/heat/cold stress/hypothermia/falls	☐	FLD18 - Operation and Use of Boats
Water hazards	Drowning/frostbite/hypothermia/falls/electrocution	☐	FLD19 - Working Over Water
Vehicle hazards	Struck by vehicle/collision	☐	FLD20 – Traffic
Explosions	Explosion/fire/thermal burns	☐	FLD21 – Explosives
Moving mechanical parts	Crushing/pinch points/overhead hazards/electrocution	☐	FLD22 - Heavy Equipment Operation
Moving mech. parts	Overhead hazards/electrocution	☐	FLD23 - Cranes/Lifting Equipment Operation
Working at elevation	Overhead hazards/falls/electrocution	☐	FLD24 - Aerial Lifts/Manlifts
Working at elevation	Overhead hazards/falls/electrocution	☒	FLD25 - Working at Elevation
Working at elevation	Overhead hazards/falls/electrocution/slips	☒	FLD26 – Ladders
Working at elevation	Slips/trips/falls/overhead hazards	☐	FLD27 – Scaffolding
Trench cave-in	Crushing/falling/overhead hazards/suffocation	☐	FLD28 - Excavating/Trenching
Improper material handling	Back injury/crushing from load shifts	☒	FLD29 - Materials Handling
Physiochemical	Explosions/fires from oxidizing, flam./corr. material	☐	FLD30 - Hazardous Materials Use/Storage
Physiochemical	Fire and explosion	☐	FLD31 - Fire Prevention/Response Plan Required
Physiochemical	Fire	☒	FLD32 - Fire Extinguishers Required
Structural integrity	Overhead/electrocution/slips/trips/falls/fire	☐	FLD33 – Demolition
Electrical	Electrocution/shock/thermal burns	☐	FLD34 – Utilities
Electrical	Electrocution/shock/thermal burns	☒	FLD35 - Electrical Safety
Burns/fires	Heat stress/fires/burns	☐	FLD36 - Welding/Cutting/Burning
Impact/thermal	Thermal burns/high pressure impaction/heat stress	☐	FLD37 - High Pressure Washers
Impaction/electrical	Smashing body parts/pinching/cuts/electrocution	☒	FLD38 - Hand and Power Tools
Poor visibility	Slips/trips/falls	☒	FLD39 – Illumination
Fire/explosion	Burns/impaction	☐	FLD40 - Storage Tank Removal/Decommissioning
Communications	Disruption of communications	☐	FLD41 - Std. Hand/Emergency Signals
Energy/release	Unexpected release of energy	☐	FLD42 - Lockout/Tagout
Logging/ground clearing/grubbing activities	Operations associated with felling/moving of trees/brush/logs	☐	FLD47 - Clearing, Grubbing, and Logging Operations
Drilling hazards	Electrocution/overhead hazards/pinch points	☐	1.6 - Drilling Safety Guide

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TASK-BY-TASK RISK ASSESSMENT FORM 8
(COMPLETE ONE SHEET FOR EACH TASK)

TASK DESCRIPTION

Task 01: START personnel will accompany EPA and MDEQ personnel in a walkthrough of facility buildings in order to screen for respiratory hazards and note locations for sampling.

EQUIPMENT REQUIRED/USED
(Be specific, e.g., hand tools, heavy equipment, instruments, PPE)

SCBA(if needed), Multirae air monitor, Digital camera, Saranex chemical suit, latex gloves, nitrile gloves, Draeger pump, benzene draeger tubes, logbook, marker, flashlight.

POTENTIAL HAZARDS/RISKS

Chemical

☒ Hazard Present Risk Level: ☐ H ☒ M ☐ L

What justifies risk level? Previous investigations by WESTON and EPA personnel have noted numerous tanks, drums, and containers, of known and unknown contents, with breached containment. Awareness of potential on-site chemicals and their properties, appropriate use of PPE and air monitoring, attention to surroundings, and use of the "Buddy System" will reduce the risk of exposure.

Physical

☒ Hazard Present Risk Level: ☐ H ☒ M ☐ L

What justifies risk level? Lighting may be insufficient and the site is not secured. Physical hazards include slip/trip/fall hazards. Awareness of potential hazards, use of the "Buddy System", and careful observation of surroundings will minimize risks. Proper nutrition and hydration are important factors for maintaining physical strength and mental awareness during field work regardless of the season or site conditions.

Biological

☒ Hazard Present Risk Level: ☐ H ☐ M ☒ L

What justifies risk level? Biological hazards common to the Great Lakes area may be encountered in exterior portions of the property. Risks will be minimized by awareness, avoidance of potential hazards, and use of appropriate work clothes/PPE.

RADIOLOGICAL

☒ Hazard Present Risk Level: ☐ H ☐ M ☒ L

What justifies risk level? Site background does not indicate that radiation sources are present. However, the potential for radiation sources will be investigated, and radiation monitoring will be conducted. Proper monitoring and avoidance will minimize the risk of exposure.

LEVELS OF PROTECTION/JUSTIFICATION

Level B PPE will be used initially for air monitoring to clear the buildings for Level C or Level D entry.

SAFETY PROCEDURES REQUIRED AND/OR FIELD OPS UTILIZED

FLD 02, 05, 06, 11, 12, 13, 14, 16, 25, 26, 29, 32, 39

TASK-BY-TASK RISK ASSESSMENT FORM 8
(COMPLETE ONE SHEET FOR EACH TASK)

TASK DESCRIPTION

Task 02: START personnel will collect samples from multiple depths from on-site AST No. 2, containing waste oil and taloe.

EQUIPMENT REQUIRED/USED
(Be specific, e.g., hand tools, heavy equipment, instruments, PPE)

Multirae air monitor, Digital camera, safety harness, lanyard, Tyvek overalls, latex gloves, nitrile gloves, Draeger pump, benzene draeger tubes, logbook, marker, flashlight, bailer, hand auger, auger extensions, sample jars.

POTENTIAL HAZARDS/RISKS

Chemical

☒ Hazard Present Risk Level: ☐ H ☐ M ☒ L

What justifies risk level? Contents of AST No. 2 are characterized as waste oil and taloe. Awareness of potential on-site chemicals and their properties, appropriate use of PPE and air monitoring, attention to surroundings, and use of the "Buddy System" will reduce the risk of exposure.

Physical

☒ Hazard Present Risk Level: ☐ H ☒ M ☐ L

What justifies risk level? AST No. 2 is approximately 30 feet high. Physical hazards include slip/trip/fall hazards. Awareness of potential hazards, use of a safety harness and lanyard, use of the "Buddy System", and careful observation of surroundings will minimize risks. Proper nutrition and hydration are important factors for maintaining physical strength and mental awareness during field work regardless of the season or site conditions.

Biological

☒ Hazard Present Risk Level: ☐ H ☐ M ☒ L

What justifies risk level? Biological hazards common to the Great Lakes area may be encountered in exterior portions of the property. Risks will be minimized by awareness, avoidance of potential hazards, and use of appropriate work clothes/PPE.

RADIOLOGICAL

☒ Hazard Present Risk Level: ☐ H ☐ M ☒ L

What justifies risk level? Site background does not indicate that radiation sources are present. However, the potential for radiation sources will be investigated, and radiation monitoring will be conducted. Proper monitoring and avoidance will minimize the risk of exposure.

LEVELS OF PROTECTION/JUSTIFICATION

Level D PPE with fall protection will be used unless air monitoring indicates the presence of volatile organic compounds, in which case, upgrade to Level C or Level B will be available.

SAFETY PROCEDURES REQUIRED AND/OR FIELD OPS UTILIZED

FLD 02, 06, 11, 12, 13, 14, 25, 26, 29, 32

TASK-BY-TASK RISK ASSESSMENT FORM 8
(COMPLETE ONE SHEET FOR EACH TASK)

TASK DESCRIPTION

Task 03: START personnel will collect samples from AST with acid and caustic material as indicated on the task list. At this time it is undetermined how many drums are to be samples. Tanks will be samples in PPE Level B

EQUIPMENT REQUIRED/USED
(Be specific, e.g., hand tools, heavy equipment, instruments, PPE)

SCBA, Multirae air monitor, safety harness, lanyard, digital camera, Saranex chemical suit, latex gloves, nitrile gloves, Draeger pump, benzene draeger tubes, logbook, marker, flashlight, bailers, sample jars, pH paper.

POTENTIAL HAZARDS/RISKS

Chemical

☒ Hazard Present Risk Level: ☐ H ☒ M ☐ L

What justifies risk level? Previous investigations by WESTON and EPA personnel have noted numerous tanks, drums, and containers, of known and unknown contents, with breached containment inside site buildings. The tanks to be sampled are labeled "acid" and "caustic" but their exact contents have not been verified. Awareness of potential on-site chemicals and their properties, appropriate use of PPE and air monitoring, attention to surroundings, and use of the "Buddy System" will reduce the risk of exposure.

Physical

☒ Hazard Present Risk Level: ☐ H ☒ M ☐ L

What justifies risk level? The tanks to be sampled are between 10 and 20 feet high. Lighting may be insufficient and the site is not secured. Physical hazards include slip/trip/fall hazards. Awareness of potential hazards, use of fall protection equipment, use of the "Buddy System", and careful observation of surroundings will minimize risks. Proper nutrition and hydration are important factors for maintaining physical strength and mental awareness during field work regardless of the season or site conditions.

Biological

☒ Hazard Present Risk Level: ☐ H ☐ M ☒ L

What justifies risk level? Animals common to the Great Lakes area could be living in abandoned site buildings. Risks will be minimized by awareness, avoidance of potential hazards, and use of appropriate work clothes/PPE.

RADIOLOGICAL

☒ Hazard Present Risk Level: ☐ H ☐ M ☒ L

What justifies risk level? Site background does not indicate that radiation sources are present. However, the potential for radiation sources will be investigated, and radiation monitoring will be conducted. Proper monitoring and avoidance will minimize the risk of exposure.

LEVELS OF PROTECTION/JUSTIFICATION

Level B PPE will be used while accessing tanks/drums of unknown contents. If air monitoring indicates no threats and sampling is of extended duration, downgrade to Level C or modified Level D is available.

SAFETY PROCEDURES REQUIRED AND/OR FIELD OPS UTILIZED

FLD 05, 06, 11, 12, 13, 14, 25, 26, 29, 32, 39

TASK-BY-TASK RISK ASSESSMENT FORM 8
(COMPLETE ONE SHEET FOR EACH TASK)

TASK DESCRIPTION

Task 04: START personnel will collect samples from 55-gallon drum of unknown contents located in the processing building and the boiler house.

EQUIPMENT REQUIRED/USED
(Be specific, e.g., hand tools, heavy equipment, instruments, PPE)

SCBA, Multirae air monitor, Digital camera, Saranex chemical suit, latex gloves, nitrile gloves, Draeger pump, benzene draeger tubes, logbook, marker, flashlight, drum thieves, disposable scoops, sample jars, pH paper.

POTENTIAL HAZARDS/RISKS

Chemical

☒ Hazard Present Risk Level: ☐ H ☒ M ☐ L

What justifies risk level? Previous investigations by WESTON and EPA personnel have noted numerous tanks, drums, and containers, of known and unknown contents, with breached containment. Awareness of potential on-site chemicals and their properties, appropriate use of PPE and air monitoring, attention to surroundings, and use of the "Buddy System" will reduce the risk of exposure.

Physical

☒ Hazard Present Risk Level: ☐ H ☒ M ☐ L

What justifies risk level? Lighting may be insufficient and the site is not secured. Physical hazards include slip/trip/fall hazards. Awareness of potential hazards, use of the "Buddy System", and careful observation of surroundings will minimize risks. Proper nutrition and hydration are important factors for maintaining physical strength and mental awareness during field work regardless of the season or site conditions.

Biological

☒ Hazard Present Risk Level: ☐ H ☐ M ☒ L

What justifies risk level? Animals common to the Great Lakes area could be living in abandoned site buildings. Risks will be minimized by awareness, avoidance of potential hazards, and use of appropriate work clothes/PPE.

RADIOLOGICAL

☒ Hazard Present Risk Level: ☐ H ☐ M ☒ L

What justifies risk level? Site background does not indicate that radiation sources are present. However, the potential for radiation sources will be investigated, and radiation monitoring will be conducted. Proper monitoring and avoidance will minimize the risk of exposure.

LEVELS OF PROTECTION/JUSTIFICATION

Level B PPE will be used while accessing drums and container. Downgrade to level C maybe used if the drums had been opened in level B, monitored and the action levels were not detected in the breathing zone. If the action levels are exceeded, continue to sample in Level B.

SAFETY PROCEDURES REQUIRED AND/OR FIELD OPS UTILIZED

FLD 05, 06, 11, 12, 13, 14, 16, 25, 26, 29, 32, 39

TASK-BY-TASK RISK ASSESSMENT FORM 8
(COMPLETE ONE SHEET FOR EACH TASK)

TASK DESCRIPTION

Task 05: START personnel will collect samples from miscellaneous containers of unknown contents located in the office building.

EQUIPMENT REQUIRED/USED
(Be specific, e.g., hand tools, heavy equipment, instruments, PPE)

SCBA, Multirae air monitor, Digital camera, Saranex chemical suit, latex gloves, nitrile gloves, Draeger pump, benzene draeger tubes, logbook, marker, flashlight, sample jars, pH paper.

POTENTIAL HAZARDS/RISKS

Chemical

☒ Hazard Present Risk Level: ☐ H ☒ M ☐ L

What justifies risk level? Previous investigations by WESTON and EPA personnel have noted numerous tanks, drums, cyllanders, and containers, of known and unknown contents, some with breached containment. Awareness of potential on-site chemicals and their properties, appropriate use of PPE and air monitoring, attention to surroundings, and use of the "Buddy System" will reduce the risk of exposure.

Physical

☒ Hazard Present Risk Level: ☐ H ☒ M ☐ L

What justifies risk level? Lighting may be insufficient and the site is not secured. Physical hazards include slip/trip/fall hazards. Awareness of potential hazards, use of the "Buddy System", and careful observation of surroundings will minimize risks. Proper nutrition and hydration are important factors for maintaining physical strength and mental awareness during field work regardless of the season or site conditions.

Biological

☒ Hazard Present Risk Level: ☐ H ☐ M ☒ L

What justifies risk level? Animals common to the Great Lakes area could be living in abandoned site buildings. Risks will be minimized by awareness, avoidance of potential hazards, and use of appropriate work clothes/PPE.

RADIOLOGICAL

☒ Hazard Present Risk Level: ☐ H ☐ M ☒ L

What justifies risk level? Site background does not indicate that radiation sources are present. However, the potential for radiation sources will be investigated, and radiation monitoring will be conducted. Proper monitoring and avoidance will minimize the risk of exposure.

LEVELS OF PROTECTION/JUSTIFICATION

Level B PPE will be used while accessing containers with unknown contents. Same as Task 4.

SAFETY PROCEDURES REQUIRED AND/OR FIELD OPS UTILIZED

FLD 05, 06, 11, 12, 13, 14, 16, 25, 26, 29, 32, 39

PERSONNEL PROTECTION PLAN-FORM 9

Engineering Controls
Describe Engineering Controls used as part of Personnel Protection Plan:

Task(s)	
All	During Task 01, discuss the plan of action in detail prior to entry and document the plan of action. For the acid and caustic tanks use proper shielding to reduce exposure. Determine the amount of wind and wind direction.

Administrative Controls
Describe Administrative Controls used as part of Personnel Protection Plan:

Task(s)	
All	Appropriate Work Zone Delineation. All Field Personnel: 40-Hour OSHA Health and Safety (H&S) Training, 8-Hour OSHA H&S Refresher Training (As Needed), Medical Monitoring Clearance. SHSC: 8-Hour SHSC training, First Aid, Bloodborne Pathogens, And Adult Cardiopulmonary Resuscitation (CPR) Training, and Extensive Field Experience.

Personal Protective Equipment
Action Levels for Changing Levels of Protection. Refer to HASP Form 13, Site Air Monitoring Program—Action Levels. Define Action Levels for up or down grade for each task:

Task(s)	
01	Level B initially, downgrade to Level D if indicated by air monitoring.
02	Level C/D with fall protection
03 -05	Level B, with fall protection when necessary.

DESCRIPTION OF LEVELS OF PROTECTION

Level D		Level D Modified
Task(s): 01 (if indicated by air monitoring), 02		**Task(s):**
☒ Head	Hard hat	☐ Head
☒ Eye and Face	Safety glasses	☐ Eye and Face
☐ Hearing		☐ Hearing
☐ Arms and Legs Only		☐ Arms and Legs Only
☒ Appropriate Work Uniform		☐ Whole Body
☒ Hand – Gloves (as appropriate)	latex	☐ Apron
☒ Foot - Safety Boots		☐ Hand - Gloves
☒ Fall Protection – Task 02	Safety harness and lanyard	☐ Gloves
☐ Flotation		☐ Gloves
☐ Other		☐ Foot - Safety Boots
		☐ Over Boots

DESCRIPTION OF LEVELS OF PROTECTION FORM 10

Level C		Level B	
Task(s): 01, 02, 03 (if indicated by air monitoring)		**Task(s): 01, 03 - 05**	
☒ Head		☒ Head	Hard hat
☐ Eye and Face		☐ Eye and Face	
☐ Hearing		☐ Hearing	
☐ Arms and Legs Only		☐ Arms and Legs Only	
☒ Whole Body	Saranex	☒ Whole Body	Saranex
☐ Apron		☐ Apron	
☒ Hand - Gloves		☒ Hand - Gloves	
☒ Gloves	latex	☒ Gloves	Latex
☒ Gloves	nitrile	☒ Gloves	Nitrile
☒ Foot - Safety Boots		☒ Foot - Safety Boots	
☒ Outer Boots		☒ Outer Boots	
☐ Boots (Other)		☒ Boots (Other)	
☐ Half Face		☐ SAR - Airline	
☐ Cart./Canister		☒ SCBA	
☒ Full Face		☐ Comb. Airline/SCBA	
☒ Cart./Canister	P-100	☐ Cascade System	
☐ PAPR		☐ Compressor	
☐ Cart./Canister		☒ Fall Protection	Task 03; if nec.
☐ Type C		☐ Flotation	
☒ Fall Protection	Task 02, 03, if nec	☐ Other	
☐ Flotation			
☐ Other			

SITE OR PROJECT HAZARD MONITORING PROGRAM-FORM 11

Air Monitoring Instruments

Instrument Selection and Initial Check Record

Reporting Format: ☐ Field Notebook ☐ Field Data Sheets* ☐ Air Monitoring Log ☐ Trip Report ☐ Other

Instrument	Task No.(s)	Number Required	Number Received	Checked Upon Receipt	Comment	Initials
☐ CGI				☐		
☐ O_2				☐		
☐ CGI/O_2				☐		
☒ CGI/O_2/tox-PPM, H_2S,H_2S/CO (Multirae)	01 - 05	1		☐		
☒ RAD				☐		
☒ GM (Pancake)	01	1		☐		
☐ NaI (Micro R)				☐		
☐ ZnS (Alpha Scintillator)				☐		
☐ Other _____				☐		
☒ PID				☐		
☐ HNu 10.2				☐		
☐ HNu 11.7				☐		
☐ Photovac, TMA				☐		
☐ OVM				☐		
☒ Other Multirae	01 - 05	1		☐		
☐ FID				☐		
☐ Fox 128				☐		
☐ Heath, AID, Other				☐		
☐ RAM, Mini-RAM, Other _____				☐		
☐ Monitox				☐		
Specify: _____				☐		
☐ Personal Sampling				☐		
Specify: _____				☐		
☐ Bio-Aerosol Monitor				☐		
☒ Pump - MSA, Dräeger, Sensidyne	01 - 05	1		☐		
☐ Tubes/type: acid	01, 03 - 05	3 box		☐		
☒ Tubes/type: benzene	01– 05	3 box		☐		
☐ Other _____				☐		

*Refer to Attachment E

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SITE OR PROJECT HAZARD MONITORING PROGRAM FORM 12

Air Monitoring Instruments Calibration Record

Instrument, Mfg., Model, Equip. ID No.	Date	Time	Calib. Material	Calib. Method Mfg.'s	Other	Initial Setting and Reading	Final Setting and Reading	Calibrator's Initials

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SITE AIR MONITORING PROGRAM-FORM 13

Action Levels

These Action Levels, if not defined by regulation, are some percent (usually 50%) of the applicable PEL/TLV/REL. That number must also be adjusted to account for instrument response factors.

	Tasks	Action Level		Action
☒ **Explosive atmosphere**	All	Ambient Air Concentration	Confined Space Concentration	
		<10% LEL	0 to 1% LEL	Work may continue. Consider toxicity potential.
		10 to 25% LEL	1 to 10% LEL	Work may continue. Increase monitoring frequency.
		>25% LEL	>10% LEL	Work must stop. Ventilate area before returning.
☒ **Oxygen**	All	Ambient Air Concentration	Confined Space Concentration	
		<19.5% O_2	<19.5% O_2	Leave area. Re-enter only with self-contained breathing apparatus.
		19.5% to 25% O_2	19.5% to 23.5% O_2	Work may continue. Investigate changes from 21%.
		>25% O_2	>23.5% O_2	Work must stop. Ventilate area before returning.
☒ **Radiation**	01	< 3 times background		Continue work.
		3 times background to < 1 mR/hour		Radiation above background levels (normally 0.01-0.02 mR/hr) signifies possible radiation source(s) present. Continue investigation with caution. Perform thorough monitoring. Consult with a Health Physicist.
		> 1 mrem/hour		Potential radiation hazard. Evacuate site. Continue investigation only upon the advice of Health Physicist.
☒ **Organic gases and vapors**	All	Organic Acids: Action Level is >5 ppm of acid (nonspecific), as indicated by a change of color from gray to yellow or yellowish pink on an acid draeger tube.		Once there is color change, exit the site for reevaluation and re-enter in level C.
		Organic (nonacid): < 1 unit above background 1 to 5 units above background > 5 units above background		 Level D, continue air monitoring Upgrade-Level C , continue air monitoring Upgrade to Level B
☒ **Inorganic gases, vapors, and particulates**	All	Acid Draeger Tubes -Changes in color at 5 ppm Action Level > 5.0 ppm HCl – yellowish pink Formic Acid - yellow Phosphoric Acid - yellow Hydrofluoric Acid – yellowish Pink		Once there is color change, exit the site for reevaluation and re-enter in level C.
		no visible dust (< 2.5 mg/m^3)		Continue work, monitor air visually.
		visible dust (≥ 2.5 mg/m^3)		Initiate dust suppression and/or evacuate affected area.
		Inorganic gas/vapor same as for organic gases and vapors		Same actions as for organic gases and vapors.

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CONTINGENCIES-FORM 14

Emergency Contacts and Phone Numbers

Agency	Contact	Phone Number
Local Medical Emergency Facility (LMF)	Detroit Receiving Hospital	(313) 745-3356
WESTON Medical Emergency Contact	EMR - Dr. Elyane Theriault	1-800-229-3674
WESTON Health and Safety	Corporate Health and Safety	(610) 701-3000
Fire Department	Detroit Engine 37	911
Police Department	Detroit 4th Precinct	(313) 596-5400 or 911
On-Site Coordinator- SHSC	Rebecca Nemirvsky	(313) 989-2534
Client Site Contact	EPA OSC ROSS POWERS	734-612-5809 TBD
Site Telephone	START mobile SARAH MEYER	414-517-4429 TBD
Nearest Telephone	START mobile	TBD

Local Medical Emergency Facility(s)

Name of Hospital: Detroit Receiving Hospital

Address:Detroit Receiving Hospital 4201 St. Antoine, Detroit, MI 48201 **Phone:** (313) 745-3356 ER	**Phone No.: 313-745-3356**
Name of Contact: Info	**Phone No.: 313-745-3000**

Type of Service:

- ☐ Physical trauma only
- ☐ Chemical exposure only
- ☒ Physical trauma and chemical exposure
- ☒ Available 24 hours

DIRECTIONS	DISTANCE
1: Start out going Northwest on MILITARY ST towards HUSSAR ST by turning left.	0.17 miles
2: Turn LEFT onto FORT ST W/MI-3.	0.07 miles
3: Turn RIGHT onto DRAGOON ST.	0.06 miles
4: Turn RIGHT onto FISHER FRWY W.	0.03 miles
5: Turn SLIGHT LEFT to take the I-75 N ramp.	0.16 miles
6: Merge onto I-75 N.	3.98 miles
7: Take the I-75 N/I-375 S exit towards DOWNTOWN/FLINT.	0.22 miles
8: Take the I-75 N exit on the left towards FLINT.	0.25 miles
9: Merge onto I-75 N.	0.37 miles
10: Take the exit- exit number 52- towards MACK AVE.	0.16 miles
11: Stay straight to go onto CHRYSLER DR.	0.04 miles
12: Turn LEFT onto MACK AVE.	0.28 miles
13: Turn RIGHT onto ST ANTOINE ST.	0.01 miles
14: ST ANTOINE ST becomes BEAUBIEN ST.	0.25 miles
15: BEAUBIEN ST becomes ST ANTOINE ST.	0.06 miles
Total Estimated Time: 10 minutes	**Total Distance: 6.12 miles**

Travel time from site:

10 minutes

Distance to hospital:

6.12 miles

Name/no. of 24-hr ambulance service:

911

Secondary or Specialty Service Provider

Name of Hospital: St. John Riverview

Address: 7733 E. Jefferson St., Detroit, MI 48201

Phone No.: (313) 499-4150 info

Name of Contact: Emergency Room

Phone No.: (313) 499-4999 ER

Type of Service:

- ☐ Physical trauma only
- ☐ Chemical exposure only
- ☒ Physical trauma and chemical exposure
- ☒ Available 24 hours

Route to Hospital (written detail):

Directions	Distance
1: Start out going Northwest on MILITARY ST towards HUSSAR ST by turning left.	0.2 miles
2: Turn LEFT onto FORT ST W.	0.1 miles
3: Turn RIGHT onto DRAGOON ST.	0.1 miles
4: Turn RIGHT onto FISHER FRWY W.	0.0 miles
5: Turn SLIGHT LEFT to take the I-75 N ramp.	0.2 miles
6: Merge onto I-75 N.	4.0 miles
7: Take the I-75 N/I-375 S exit towards DOWNTOWN/FLINT.	0.2 miles
8: Take the I-375 S exit towards DOWNTOWN.	0.2 miles
9: Merge onto I-375 S.	0.4 miles
10: Take the exit towards JEFFERSON AVE EAST.	0.1 miles
11: Stay straight to go onto CHRYSLER DR.	0.1 miles
12: Turn LEFT onto E JEFFERSON AVE.	2.3 miles
Total Distance:	7.9 miles
Estimated Time:	17 minutes

Travel time from site:

17 min

Distance to hospital:

7.9

Name/no. of 24-hr ambulance service:

911 /

Figure 1. Route to Hospital

(Draw map to hospital here if space permits or attach on next sheet.)

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FIGURE 1 - ROUTE TO HOSPITAL (MAP)-FORM 15

See Attached.

CONTINGENCIES FORM 16

Response Plans

Medical - General	First Aid Kit: Yes	Type: First Responder with eyewash and BBP kit	Location: WESTON vehicle	Special First-Aid Procedures: Cyanides on-site ☐ Yes ☒ No If yes, contact LMF. Do they have antidote kit? ☐ Yes ☐ No
Provide first aid, if trained; assess and determine need for further medical assistance. Transport or arrange for transport after appropriate decontamination.	Eyewash required ☐ Yes ☒ No	Type	Location	**HF** on-site ☐ Yes ☒ No If yes, need neutralizing ointment for first-aid kit. Contact LMF.
	Shower required ☐ Yes ☒ No	Type	Location	

Plan for Response to Spill/Release		**Plan for Response to Fire/Explosion**		**Fire Extinguishers**
In the event of a spill or release, ensure safety, assess situation, and perform containment and control measures, as appropriate.	a. Cleanup per MSDSs if small; or sound alarm, call for assistance, notify Emergency Coordinator b. Evacuate to pre-determined safe place c. Account for personnel d. Determine if team can respond safely e. Mobilize per Site Spill Response Plan	In the event of a fire or explosion, ensure personal safety, assess situation, and perform containment and control measures, as appropriate:	a. Sound alarm and call for assistance, notify Emergency Coordinator b. Evacuate to predetermined safe place c. Account for personnel d. Use fire extinguisher only if safe and trained in its use e. Stand by to inform emergency responders of materials and conditions	Type/Location ABC/START vehicle ___/___ ___/___ ___/___ ___/___ ___/___ ___/___

Description of Spill Response Gear	Location	Description (Other Fire Response Equipment)	Location

Plan to Respond to Security Problems

Call 911 from site phone or cellular phone.

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DECONTAMINATION PLAN FORM 17

Personnel Decontamination

Consistent with the levels of protection required, step-by-step procedures for personnel decontamination for each level of protection are attached.

Levels of Protection Required for Decontamination Personnel

The levels of protection required for personnel assisting with decontamination will be:

☐ Level B ☐ Level C ☒ Level D

Modifications include:
Nitrile gloves

Disposition of Decontamination Wastes

Provide a description of waste disposition, including identification of storage area, hauler, and final disposal site, if applicable:

Decontamination waste generated by WESTON is anticipated to be PPE only. PPE will be stored in trashbags and disposed appropriately.

Equipment Decontamination

A procedure for decontamination steps required for non-sampling equipment and heavy machinery follows:

If WESTON equipment requires decontamination, it will be wiped down with a paper towel soaked in an alconox water wash and rinsed with distilled water.

Sampling Equipment Decontamination

Sampling equipment will be decontaminated in accordance with the following procedure:

All non-disposable sampling equipment will be washed in alconox water wash, rinsed with distilled water, and allowed to air dry.

LEVEL D/MODIFIED LEVEL D DECONTAMINATION PLAN-FORM 18

Check indicated functions or add steps, as necessary:

Function	Description of Process, Solution, and Container
☒Segregated equipment drop	Drop equipment in a designated decon area for decontamination.
☒Boot cover and glove wash	Remove any excess material generated.
☐Boot cover and glove rinse	
☒Tape removal - outer glove and boot	If necessary and place in a trash bag.
☒Boot cover removal	If necessary and place in a trash bag.
☒Outer glove removal	If necessary and place in a trash bag.
HOTLINE	
☐Suit/safety boot wash	
☐Suit/boot/glove rinse	
☐Safety boot removal	
☒Suit removal	If necessary and place in a trash bag.
☐Inner glove wash	
☐Inner glove rinse	
☒Inner glove removal	If necessary and place in a trash bag.
☐Inner clothing removal	
CONTAMINATION REDUCTION ZONE (CRZ)/SAFE ZONE BOUNDARY	
☒Field wash	Wash hands and face with soap and water as soon ast possible and before eating or drinking or other hand to mouth contact.
☐Redress	

Disposal Plan, End of Day:

Trash bag(s) with PPE will be closed and staged in a secure area.

Disposal Plan, End of Week:

Trash bag(s) with PPE will be staged in a secure area.

Disposal Plan, End of Project:

Material will be stored in an ~~appropriately~~ permitted landfill.
off site, labeled, inside buildings.

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LEVEL C DECONTAMINATION PLAN-FORM 19

Check indicated functions or add steps, as necessary:

Function	Description of Process, Solution, and Container
☒Segregated equipment drop	Drop equipment in a designated decon area for decontamination.
☒Boot cover and glove wash	Remove any excess material generated.
☐Boot cover and glove rinse	
☒Tape removal - outer glove and boot	If necessary and place in a trash bag.
☒Boot cover removal	If necessary and place in a trash bag.
☒Outer glove removal	If necessary and place in a trash bag.
HOTLINE	
☐Suit/safety boot wash	
☐Suit/boot/glove rinse	
☐Safety boot removal	
☒Suit removal	If necessary and place in a trash bag.
☐Inner glove wash	
☐Inner glove rinse	
☒Facepiece removal	If necessary and place in a trash bag.
☒Inner glove removal	If necessary and place in a trash bag.
☐Inner clothing removal	
CONTAMINATION REDUCTION ZONE (CRZ)/SAFE ZONE BOUNDARY	
☒Field wash	Wash hands and face with soap and water as soon ast possible and before eating or drinking or other hand to mouth contact.
☐Redress	

Disposal Plan, End of Day:

Trash bag(s) with PPE will be closed and staged in a secure area.

Disposal Plan, End of Week:

Trash bag(s) with PPE will staged in a secure area.

Disposal Plan, End of Project:

Material will be stored in an appropriately permitted landfill.

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LEVEL B DECONTAMINATION PLAN-FORM 20

Check indicated functions or add steps, as necessary:

Function	Description of Process, Solution, and Container
☐Segregated equipment drop	
☐Boot cover and glove wash	
☐Boot cover and glove rinse	
☐Tape removal - outer glove and boot	
☐Boot cover removal	
☐Outer glove removal	
HOTLINE	
☐Suit/safety boot wash	
☐Suit/SCBA/boot/glove rinse	
☐Safety boot removal	
☐Remove SCBA backpack without disconnecting	
☐Splash suit removal	
☐Inner glove wash	
☐Inner glove rinse	
☐SCBA disconnect and facepiece removal	
☐Inner glove removal	
☐Inner clothing removal	
CONTAMINATION REDUCTION ZONE (CRZ)/SAFE ZONE BOUNDARY	
☐Field wash	
☐Redress	

Disposal Plan, End of Day:

Trash bag(s) with PPE will be closed and staged in a secure area.

Disposal Plan, End of Week:

Trash bag(s) with PPE will be staged in a secure area.

Disposal Plan, End of Project:

Material will be stored in an appropriately permitted landfill.

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SITE PERSONNEL AND CERTIFICATION STATUS FORM 21

WESTON	
Name: Rebecca Nemirovsky **Title: Asst. Proj. Scientist** **Task(s): All** **Certification Level or Description:** ☒ Medical Current ☒ Training Current ☒ Fit Test Current (Qual.) ☒ Fit Test Current (Quant.)	**Name: Sarah Meyer** **Title: Site Leader** **Task(s): All** **Certification Level or Description:** ☒ Medical Current ☒ Training Current ☒ Fit Test Current (Qual.) ☐ Fit Test Current (Quant.)
Name: **Title:** **Task(s):** **Certification Level or Description:** ☐ Medical Current ☐ Training Current ☐ Fit Test Current (Qual.) ☐ Fit Test Current (Quant.)	**Name:** **Title:** **Task(s):** **Certification Level or Description:** ☐ Medical Current ☐ Training Current ☐ Fit Test Current (Qual.) ☐ Fit Test Current (Quant.)
Name: **Title:** **Task(s):** **Certification Level or Description:** ☐ Medical Current ☐ Training Current ☐ Fit Test Current (Qual.) ☐ Fit Test Current (Quant.)	**Name:** **Title:** **Task(s):** **Certification Level or Description:** ☐ Medical Current ☐ Training Current ☐ Fit Test Current (Qual.) ☐ Fit Test Current (Quant.)
Name: **Title:** **Task(s):** **Certification Level or Description:** ☐ Medical Current ☐ Training Current ☐ Fit Test Current (Qual.) ☐ Fit Test Current (Quant.)	**Name:** **Title:** **Task(s):** **Certification Level or Description:** ☐ Medical Current ☐ Training Current ☐ Fit Test Current (Qual.) ☐ Fit Test Current (Quant.)
Name: **Title:** **Task(s):** **Certification Level or Description:** ☐ Medical Current ☐ Training Current ☐ Fit Test Current (Qual.) ☐ Fit Test Current (Quant.)	**Name:** **Title:** **Task(s):** **Certification Level or Description:** ☐ Medical Current ☐ Training Current ☐ Fit Test Current (Qual.) ☐ Fit Test Current (Quant.)
Name: **Title:** **Task(s):** **Certification Level or Description:** ☐ Medical Current ☐ Training Current ☐ Fit Test Current (Qual.) ☐ Fit Test Current (Quant.)	**Name:** **Title:** **Task(s):** **Certification Level or Description:** ☐ Medical Current ☐ Training Current ☐ Fit Test Current (Qual.) ☐ Fit Test Current (Quant.)

TRAINING CURRENT - Training: All personnel, including visitors, entering the exclusion or contamination reduction zones must have certifications of completion of training in accordance with OSHA 29 CFR 1910, 29 CFR 1926, or 29 CFR 1910.120.

FIT TEST CURRENT - Respirator Fit Testing: All persons, including visitors, entering any area requiring the use or potential use of any negative pressure respirator must have had, as a minimum, a qualitative fit test, administered in accordance with OSHA 29 CFR 1910.134 or ANSI, within the last 12 months. If site conditions require the use of a full-face, negative-pressure, air-purifying respirator for protection from asbestos or lead, employees must have had a qualitative fit test, administered according to OSHA 29 CFR 1910.1001 or 1025/1926, within the last 6 months.

MEDICAL CURRENT - Medical Monitoring Requirements: All personnel, including visitors, entering the exclusion or contamination reduction zones must be certified as medically fit to work and to wear a respirator, if appropriate, in accordance with 29 CFR 1910, 29 CFR 1926/1910, or 29 CFR 1910.120.

The Site Health and Safety Coordinator is responsible for verifying all certifications and fit tests.

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SITE PERSONNEL AND CERTIFICATION STATUS FORM 22

Subcontractor's Health and Safety Program Evaluation

Name of Subcontractor: None
Address:

Activities To Be Conducted by Subcontractor:

Evaluation Criteria

Medical program meets OSHA/WESTON criteria ☐ Acceptable ☐ Unacceptable Comments:	Personal protective equipment available ☐ Acceptable ☐ Unacceptable Comments:	On-site monitoring equipment available, calibrated, and operated properly ☐ Acceptable ☐ Unacceptable Comments:
Safe working procedures clearly specified ☐ Acceptable ☐ Unacceptable Comments:	Training meets OSHA/WESTON criteria ☐ Acceptable ☐ Unacceptable Comments:	Emergency procedures ☐ Acceptable ☐ Unacceptable Comments:
Decontamination procedures ☐ Acceptable ☐ Unacceptable Comments:	General health and safety program evaluation ☐ Acceptable ☐ Unacceptable Comments:	Additional comments: ☐ Subcontractor has agreed to and will conform with the WESTON HASP for this project. ☐ Subcontractor will work under his own HASP, which has been accepted by project PM.

Evaluation Conducted by: **Date:**

Subcontractor

Name: **Title:** **Task(s):** **Certification Level or Description:** ☐ Medical Current ☐ Training Current ☐ Fit Test Current (Qual.) ☐ Fit Test Current (Quant.)	**Name:** **Title:** **Task(s):** **Certification Level or Description:** ☐ Medical Current ☐ Training Current ☐ Fit Test Current (Qual.) ☐ Fit Test Current (Quant.)
Name: **Title:** **Task(s):** **Certification Level or Description:** ☐ Medical Current ☐ Training Current ☐ Fit Test Current (Qual.) ☐ Fit Test Current (Quant.)	**Name:** **Title:** **Task(s):** **Certification Level or Description:** ☐ Medical Current ☐ Training Current ☐ Fit Test Current (Qual.) ☐ Fit Test Current (Quant.)
Name: **Title:** **Task(s):** **Certification Level or Description:** ☐ Medical Current ☐ Training Current ☐ Fit Test Current (Qual.) ☐ Fit Test Current (Quant.)	**Name:** **Title:** **Task(s):** **Certification Level or Description:** ☐ Medical Current ☐ Training Current ☐ Fit Test Current (Qual.) ☐ Fit Test Current (Quant.)

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TRAINING AND BRIEFING TOPICS FORM 24

The following items will be covered at the site-specific training meeting, daily or periodically.	
☐ Site characterization and analysis, Sec. 3.0, 29 CFR 1910.120 I	☐ Level A
☒ Physical hazards, HASP Form 07	☒ Level B
☒ Chemical hazards, HASP Form 04	☒ Level C
☒ Animal bites, stings, and poisonous plants	☒ Level D
☐ Etiologic (infectious) agents	☒ Monitoring, 29 CFR 1910.120 (h)
☒ Site control, 29 CFR 1910.120 d	☒ Decontamination, 29 CFR 1910.120 (k)
☐ Engineering controls and work practices, 29 CFR 1910.120 (g)	☐ Emergency response, 29 CFR 1910.120 (l)
☐ Heavy machinery	☐ Elements of an emergency response, 29 CFR 1910.120 (l)
☐ Forklift	☐ Procedures for handling site emergency incidents, 29 CFR 1910.120 (l)
☐ Backhoe	☐ Off-site emergency response, 29 CFR 1910.120 (l)
☐ Equipment	☒ Handling drums and containers, 29 CFR 1910.120 (j)
☐ Tools	☒ Opening drums and containers
☐ Ladder, 29 CFR 1910.27 (d)/29 CFR 1926	☐ Electrical material handling equipment
☐ Overhead and underground utilities	☐ Radioactive waste
☐ Scaffolds	☐ Shock-sensitive waste
☐ Structural integrity	☒ Laboratory waste packs
☐ Unguarded openings - wall, floor, ceilings	☒ Sampling drums and containers
☒ Pressurized air cylinders	☐ Shipping and transport, 49 CFR 172.101, IATA
☒ Personal protective equipment, 29 CFR 1910.120 (g); 29 CFR 1910.134	☒ Tank and vault procedures
☒ Respiratory protection, 29 CFR 1910.120 (g); ANSI Z88.2	☒ Illumination, 29 CFR 1910.120 (m)
☐	☐ Sanitation, 29 CFR 1910.120 (n)
☐	☐
☐	☐
☐	☐

Revised 02/1998

ATTACHMENT A
CHEMICAL CONTAMINANTS DATA SHEETS-FORM 25

(Attach completed HASP Form 25
[H&S—1 Chemical Hazards Form]
or attach appropriate data sheets.)

Click here to go to Form 25

Division of Facilities Services

DOD Hazardous Material Information (ANSI Format)
For Cornell University Convenience Only

SODIUM HYPOCHLORITE SOLUTION

Section 1 - Product and Company Identification	Section 9 - Physical & Chemical Properties
Section 2 - Compositon/Information on Ingredients	Section 10 - Stability & Reactivity Data
Section 3 - Hazards Identification Including Emergency Overview	Section 11 - Toxicological Information
Section 4 - First Aid Measures	Section 12 - Ecological Information
Section 5 - Fire Fighting Measures	Section 13 - Disposal Considerations
Section 6 - Accidental Release Measures	Section 14 - MSDS Transport Information
Section 7 - Handling and Storage	Section 15 - Regulatory Information
Section 8 - Exposure Controls & Personal Protection	Section 16 - Other Information

Section 1 - Product and Company Identification
SODIUM HYPOCHLORITE SOLUTION

Product Identification: SODIUM HYPOCHLORITE SOLUTION
Date of MSDS: 01/01/1987 **Technical Review Date:** 03/24/1999
FSC: 6810 **NIIN:** 00-900-6276
Submitter: D DG
Status Code: C
MFN: 01
Article: N
Kit Part: N

Manufacturer's Information

Manufacturer's Name: HERBERT-VERKAMP-CALVERT CHEMICAL COMPANY
Manufacturer's Address1:
Manufacturer's Address2: N/P, NK 00000

Manufacturer's Country: NK
General Information Telephone:
Emergency Telephone: 513-874-9261
Emergency Telephone: 513-874-9261
MSDS Preparer's Name: N/P
Proprietary: N
Reviewed: Y
Published: Y
CAGE: 5P576
Special Project Code: N

Item Description

Item Name: SODIUM HYPOCHLORITE SOLUTION
Item Manager: S9G
Specification Number: NK
Type/Grade/Class: NK
Unit of Issue: CN **Quantitative Expression:** 00000000005GL
Unit of Issue Quantity: 1
Type of Container: CAN

Contractor Information

Contractor's Name: HERBERT-VERKAMP-CALVERT CHEMICAL COMPANY
Contractor's Address1: UNKNOWN
Contractor's Address2: UNKNOWN, NK 00000
Contractor's Telephone: UNKNOWN
Contractor's CAGE: 5P576

Section 2 - Compositon/Information on Ingredients
SODIUM HYPOCHLORITE SOLUTION

Ingredient Name: SODIUM HYPOCHLORITE (SARA III)
Ingredient CAS Number: 7681-52-9 **Ingredient CAS Code:** M
RTECS Number: NH3486300 **RTECS Code:** M
=WT: =WT Code:
=Volume: =Volume Code:
>WT: >WT Code:
>Volume: >Volume Code:
<WT: <WT Code:
<Volume: <Volume Code:
% Low WT: % Low WT Code:
% High WT: % High WT Code:
% Low Volume: % Low Volume Code:
% High Volume: % High Volume Code:
% Text: N/P
% Enviromental Weight:
Other REC Limits: N/P
OSHA PEL: NOT ESTABLISHED **OSHA PEL Code:** M
OSHA STEL: OSHA STEL Code:

ACGIH TLV: NOT ESTABLISHED **ACGIH TLV Code:** M
ACGIH STEL: N/P **ACGIH STEL Code:**
EPA Reporting Quantity: 100 LBS
DOT Reporting Quantity: 100 LBS
Ozone Depleting Chemical: N

Section 3 - Hazards Identification, Including Emergency Overview
SODIUM HYPOCHLORITE SOLUTION

Health Hazards Acute & Chronic: N/P

Signs & Symptoms of Overexposure:
INHALATION: BREATHNG DIFFICULTY, NAUSEA, RESPIRATORY TRACK IRRITATION; SKIN/EYE: IRRITATION, BURNS; INGESTION: NAUSEA, VOMITING, IRRITATION & BURNS.

Medical Conditions Aggravated by Exposure:
N/P

LD50 LC50 Mixture: N/P

Route of Entry Indicators:
Inhalation: N/P
Skin: N/P
Ingestion: N/P

Carcenogenicity Indicators
NTP: N/P
IARC: N/P
OSHA: N/P

Carcinogenicity Explanation: N/P

Section 4 - First Aid Measures
SODIUM HYPOCHLORITE SOLUTION

First Aid:
INHALATION: REMOVE TO FRESH AIR. CONTACT: IMMEDIATELY FLUSH EYES OR SKIN WITH PLENTY OF WATER. REMOVE CONTAMINATED CLOTHING & SHOWER. INGESTION: KEEP PATIENT QUIET, GET MED ATTN.

Section 5 - Fire Fighting Measures
SODIUM HYPOCHLORITE SOLUTION

Fire Fighting Procedures:
KEEP CONTAINERS COOL TO PREVENT RELEASE OF CHLORINE GAS.
Unusual Fire or Explosion Hazard:
EXPOSURE TO HEAT WILL INCREASE DECOMPOSITION OF PRODUCT INTO CHLORINE GAS. MAY ACT AS AN OXIDIZER.
Extinguishing Media:
NONE
Flash Point: Flash Point Text: NONE

Autoignition Temperature:
Autoignition Temperature Text: N/A
Lower Limit(s):
Upper Limit(s):

Section 6 - Accidental Release Measures
SODIUM HYPOCHLORITE SOLUTION

Spill Release Procedures:
CONTAIN THE SPILL. REUSE MATERIAL IF POSSIBLE. NEUTRALIZE BEFORE FLUSHING TO SEWERS.

Section 7 - Handling and Storage
SODIUM HYPOCHLORITE SOLUTION

Handling and Storage Precautions:

Other Precautions:

Section 8 - Exposure Controls & Personal Protection
SODIUM HYPOCHLORITE SOLUTION

Repiratory Protection:
NO SPECIAL REQMNTS UNDER ORDINARY CONDITIONS/ADEQUATE VENTILATION.
Ventilation:
MECHANICAL(GENERAL) RECOMMENDED,LOCAL EXHAUST IF NEEDED
Protective Gloves:
RUBBER
Eye Protection: SAFETY/CHEM GOGGLES
Other Protective Equipment: RUBBER APRON, SAFETY SHOWERS SHOULD BE PRESENT
Work Hygenic Practices: N/P
Supplemental Health & Safety Information: MSDS UNDATED PRODUCT IS SIMILIAR TO HOUSEHOLD BLEACH, SUCH AS CHLOROX. SPEC GRADE A

Section 9 - Physical & Chemical Properties
SODIUM HYPOCHLORITE SOLUTION

HCC: B1
NRC/State License Number:
Net Property Weight for Ammo:
Boiling Point: =100.C, 212.F **Boiling Point Text:** APPROX
Melting/Freezing Point: Melting/Freezing Text: N/A
Decomposition Point: Decomposition Text: N/A
Vapor Pressure: N/A **Vapor Density:** N/A
Percent Volatile Organic Content:
Specific Gravity: 1.223
Volatile Organic Content Pounds per Gallon:
pH: N/P
Volatile Organic Content Grams per Liter:
Viscosity: N/P
Evaporation Weight and Reference: N/A
Solubility in Water: COMPLETE

Appearance and Odor: YELLOW LIQUID W/ CHLORINE ODOR
Percent Volatiles by Volume: N/A
Corrosion Rate: N/P

Section 10 - Stability & Reactivity Data
SODIUM HYPOCHLORITE SOLUTION

Stability Indicator: NO
Materials to Avoid:
ACIDS, AMMONIA, ORGANIC MATERIALS, REDUCING AGENTS
Stability Condition to Avoid:
HIGH TEMPERATURES.
Hazardous Decomposition Products:
CHLORINE GAS & OXYGEN
Hazardous Polymerization Indicator: NO
Conditions to Avoid Polymerization:
N/A

Section 11 - Toxicological Information
SODIUM HYPOCHLORITE SOLUTION

Toxicological Information:
N/P

Section 12 - Ecological Information
SODIUM HYPOCHLORITE SOLUTION

Ecological Information:
N/P

Section 13 - Disposal Considerations
SODIUM HYPOCHLORITE SOLUTION

Waste Disposal Methods:
NEUTRALIZE ADDING 1 PINT OF 35% HYDROGEN PEROXIDE/5 LBS. OF BLEACH. THEN ADJUST PH TO 7 W/DILUTE ACID. FLUSH TO SEWER. FOLLOW ALL LOCAL,STATE & FEDERAL REGULATIONS.

Section 14 - MSDS Transport Information
SODIUM HYPOCHLORITE SOLUTION

Transport Information:
N/P

Section 15 - Regulatory Information
SODIUM HYPOCHLORITE SOLUTION

SARA Title III Information:
N/P
Federal Regulatory Information:
N/P
State Regulatory Information:
N/P

Section 16 - Other Information
SODIUM HYPOCHLORITE SOLUTION

Other Information:
N/P

HMIS Transportation Information

Product Identification: SODIUM HYPOCHLORITE SOLUTION
Transporation ID Number: 90903
Responsible Party CAGE: 5P576
Date MSDS Prepared: 01/01/1987
Date MSDS Reviewed: 11/15/1999
MFN: 11/15/1999
Submitter: D DG
Status Code: C

Container Information
Unit of Issue: CN
Container Quantity: 1
Type of Container: CAN
Net Unit Weight: 45 LBS

Article without MSDS: N
Technical Entry NOS Shipping Number:
Radioactivity:
Form:
Net Explosive Weight:
Coast Guard Ammunition Code:
Magnetism: N/P
AF MMAC Code:
DOD Exemption Number:
Limited Quantity Indicator:
Multiple Kit Number: 0
Kit Indicator: N
Kit Part Indicator: N
Review Indicator: Y
Additional Data:
CARGO AIR ONLY.

Department of Transportation Information
DOT Proper Shipping Name: HYPOCHLORITE SOLUTION
DOT PSN Code: HNU
Symbols:
DOT PSN Modifier:
Hazard Class: 8
UN ID Number: UN1791
DOT Packaging Group: III
Label: 8
Special Provision(s): B104,N34,T7
Packaging Exception: 154
Non Bulk Packaging: 203
Bulk Packaging: 241
Maximimum Quanity in Passenger Area: 5 L
Maximimum Quanity in Cargo Area: 60 L
Stow in Vessel Requirements: B
Requirements Water/Sp/Other: 26

IMO Detail Information

IMO Proper Shipping Name: HYPOCHLORITE SOLUTION
IMO PSN Code: IKL
IMO PSN Modifier:
IMDG Page Number: 8186
UN Number: 1791
UN Hazard Class: 8
IMO Packaging Group: II/III
Subsidiary Risk Label: -
EMS Number: 8-08
Medical First Aid Guide Number: 741

IATA Detail Information

IATA Proper Shipping Name: HYPOCHLORITE SOLUTION +
IATA PSN Code: NYC
IATA PSN Modifier:
IATA UN Id Number: 1791
IATA UN Class: 8
Subsidiary Risk Class:
UN Packaging Group: III
IATA Label: CORROSIVE
Packaging Note for Passengers: 819
Maximum Quantity for Passengers: 5L
Packaging Note for Cargo: 821
Maximum Quantity for Cargo: 60L
Exceptions:

AFI Detail Information

AFI Proper Shipping Name: HYPOCHLORITE SOLUTIONS
AFI Symbols:
AFI PSN Code: NYC
AFI PSN Modifier: WITH MORE THAN 5% BUT LESS THAN 16% AVAILABLE CHLORINE
AFI UN Id Number: UN1791
AFI Hazard Class: 8
AFI Packing Group: III
AFI Label:
Special Provisions: P5, N34
Back Pack Reference: A12.3

HAZCOM Label Information

Product Identification: SODIUM HYPOCHLORITE SOLUTION
CAGE: 5P576
Assigned Individual: N
Company Name: HERBERT-VERKAMP-CALVERT CHEMICAL COMPANY
Company PO Box:
Company Street Address1: UNKNOWN
Company Street Address2: UNKNOWN, NK 00000 NK
Health Emergency Telephone: 513-874-9261
Label Required Indicator: Y
Date Label Reviewed: 03/02/1999
Status Code: C
Manufacturer's Label Number:

Date of Label: 12/16/1998
Year Procured: N/K
Organization Code: G
Chronic Hazard Indicator: N/P
Eye Protection Indicator: YES
Skin Protection Indicator: YES
Respiratory Protection Indicator: YES
Signal Word: WARNING
Health Hazard: Moderate
Contact Hazard: Moderate
Fire Hazard: None
Reactivity Hazard: None

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Division of Facilities Services

DOD Hazardous Material Information (ANSI Format)
For Cornell University Convenience Only

PROPANE

Section 1 - Product and Company Identification	Section 9 - Physical & Chemical Properties
Section 2 - Compositon/Information on Ingredients	Section 10 - Stability & Reactivity Data
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Section 5 - Fire Fighting Measures	Section 13 - Disposal Considerations
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Section 1 - Product and Company Identification
PROPANE

Product Identification: PROPANE
Date of MSDS: 01/01/1987 **Technical Review Date:** 04/06/1988
FSC: 6810 **NIIN:** **LIIN:** 00F006223
Submitter: F BT
Status Code: C
MFN: 01
Article: N
Kit Part: N

Manufacturer's Information

Manufacturer's Name: BERNZOMATIC/MEDINA, NY 14103
Manufacturer's Address1:
Manufacturer's Address2: N/P, NK 00000

Manufacturer's Country: NK
General Information Telephone:
Emergency Telephone: (716) 798-4949
Emergency Telephone: (716) 798-4949
MSDS Preparer's Name: N/P
Proprietary: N
Reviewed: Y
Published: Y
CAGE: FO189
Special Project Code: N

Contractor Information

Contractor's Name: BERNZOMATIC CORP
Contractor's Address1: ONE BERNZ O MATIC DRIVE
Contractor's Address2: MEDINA, NY 14103-1648
Contractor's Telephone: 716-798-4949
Contractor's CAGE: 70785

Contractor Information

Contractor's Name: BERNZOMATIC/MEDINA, NY 14103
Contractor's Address1: UNKNOWN
Contractor's Address2: UNKNOWN, NK 00000
Contractor's Telephone: UNKNOWN
Contractor's CAGE: FO189

Section 2 - Compositon/Information on Ingredients
PROPANE

Ingredient Name: PROPANE
Ingredient CAS Number: 74-98-6 **Ingredient CAS Code:** M
RTECS Number: TX2275000 **RTECS Code:** M
=WT: =WT Code:
=Volume: =Volume Code:
>WT: >WT Code:
>Volume: >Volume Code:
<WT: <WT Code:
<Volume: <Volume Code:
% Low WT: % Low WT Code:
% High WT: % High WT Code:
% Low Volume: % Low Volume Code:
% High Volume: % High Volume Code:
% Text: 100%
% Enviromental Weight:
Other REC Limits: N/P
OSHA PEL: 1000 PPM **OSHA PEL Code:** M
OSHA STEL: OSHA STEL Code:
ACGIH TLV: ASPHYXIANT; 9192 **ACGIH TLV Code:** M
ACGIH STEL: N/P **ACGIH STEL Code:**

EPA Reporting Quantity:
DOT Reporting Quantity:
Ozone Depleting Chemical: N

Section 3 - Hazards Identification, Including Emergency Overview
PROPANE

Health Hazards Acute & Chronic: N/P

Signs & Symptoms of Overexposure:
CONTACT W/LIQUID PROPANE MAY CAUSE FROST BURNS. HIGH CONCENTRATIONS MAY CAUSE HEADACHES/DROWSINESS

Medical Conditions Aggravated by Exposure:
N/P

LD50 LC50 Mixture: N/P

Route of Entry Indicators:
Inhalation: N/P
Skin: N/P
Ingestion: N/P

Carcenogenicity Indicators
NTP: N/P
IARC: N/P
OSHA: N/P

Carcinogenicity Explanation: N/P

Section 4 - First Aid Measures
PROPANE

First Aid:
INHALATION: REMOVE EXPOSED PERSON FROM CONTAMINATED AREA.

Section 5 - Fire Fighting Measures
PROPANE

Fire Fighting Procedures:
USE WATER TO COOL TANKS. AUTO IGNITION TEMP. 842F.
Unusual Fire or Explosion Hazard:
>AIR (VAPOR DENSITY 1.5) MAY TRAVEL A CONSIDERABLE DISTANCE TO A SOURCE OF IGNITION & FLASHBACK.
Extinguishing Media:
STOP FLOW OF GAS OR OXYGEN.
Flash Point: Flash Point Text: -156F (CC)

Autoignition Temperature:
Autoignition Temperature Text: N/A
Lower Limit(s): 2.1%
Upper Limit(s): 9.5%

Section 6 - Accidental Release Measures
PROPANE

Spill Release Procedures:
REMOVE IGNITION SOURCES & VENTILATE AREA.

Section 7 - Handling and Storage
PROPANE

Handling and Storage Precautions:

Other Precautions:

Section 8 - Exposure Controls & Personal Protection
PROPANE

Repiratory Protection:
NOT REQUIRED WITH NORMAL USE.
Ventilation:
N/K
Protective Gloves:
NOT REQUIRED
Eye Protection: NOT REQUIRED
Other Protective Equipment: NOT REQUIRED
Work Hygenic Practices: N/P
Supplemental Health & Safety Information: MSDS DATE: 5/13/86

Section 9 - Physical & Chemical Properties
PROPANE

HCC:
NRC/State License Number:
Net Property Weight for Ammo:
Boiling Point: Boiling Point Text: -44F
Melting/Freezing Point: Melting/Freezing Text: N/A
Decomposition Point: Decomposition Text: N/A
Vapor Pressure: 197 **Vapor Density:** 1.56
Percent Volatile Organic Content:
Specific Gravity: .51
Volatile Organic Content Pounds per Gallon:
pH: N/P
Volatile Organic Content Grams per Liter:
Viscosity: N/P
Evaporation Weight and Reference: N/K
Solubility in Water: NOT SOLUBLE
Appearance and Odor: COLORLESS - ROTTEN EGG ODOR.
Percent Volatiles by Volume: N/K
Corrosion Rate: N/P

Section 10 - Stability & Reactivity Data
PROPANE

Stability Indicator: YES
Materials to Avoid:

N/K
Stability Condition to Avoid:
N/K
Hazardous Decomposition Products:
NONE
Hazardous Polymerization Indicator: NO
Conditions to Avoid Polymerization:
N/K

Section 11 - Toxicological Information
PROPANE

Toxicological Information:
N/P

Section 12 - Ecological Information
PROPANE

Ecological Information:
N/P

Section 13 - Disposal Considerations
PROPANE

Waste Disposal Methods:
VENT GAS TO ATMOSPHERE IN FLAME FREE, SPARK FREE AREA OUTDOORS.

Section 14 - MSDS Transport Information
PROPANE

Transport Information:
N/P

Section 15 - Regulatory Information
PROPANE

SARA Title III Information:
N/P
Federal Regulatory Information:
N/P
State Regulatory Information:
N/P

Section 16 - Other Information
PROPANE

Other Information:
N/P

HAZCOM Label Information

Product Identification: PROPANE
CAGE: FO189
Assigned Individual: Y
Company Name: BERNZOMATIC/MEDINA, NY 14103
Company PO Box:
Company Street Address1: UNKNOWN
Company Street Address2: UNKNOWN, NK 00000 NK
Health Emergency Telephone: (716) 798-4949
Label Required Indicator: Y

Date Label Reviewed: 12/16/1998
Status Code: C
Manufacturer's Label Number:
Date of Label: 12/16/1998
Year Procured: N/K
Organization Code: G
Chronic Hazard Indicator: N/P
Eye Protection Indicator: N/P
Skin Protection Indicator: N/P
Respiratory Protection Indicator: N/P
Signal Word: N/P
Health Hazard:
Contact Hazard:
Fire Hazard:
Reactivity Hazard:

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NTP CHEMICAL REPOSITORY
PCB-1260

-IDENTIFIERS
==========

*CATALOG ID NUMBER: 000526

*CAS NUMBER: 11096-82-5

*BASE CHEMICAL NAME: PCB-1260

*PRIMARY NAME: PCB-1260

*CHEMICAL FORMULA:

*STRUCTURAL FORMULA:

*WLN: Not available

*SYNONYMS:
AROCLOR 1260
CHLORODIPHENYL (60 PERCENT CL)
AROCHLOR 1260
POLYCHLORINATED BIPHENYL 1260
PCB 1260

-PHYSICAL CHEMICAL DATA
==========

*PHYSICAL DESCRIPTIONS: Viscous oily liquid.

*MOLECULAR WEIGHT: Not available

*SPECIFIC GRAVITY: 1.4

*DENSITY:Not available

*MP (DEG C): Not available

*BP (DEG C): 385-420

*SOLUBILITIES:
WATER : Not available

DMSO : Not available

95% ETHANOL : Not available

METHANOL : Not available

ACETONE : Not available

TOLUENE : Not available

OTHER SOLVENTS: Not available

*VOLATILITY : Not available

*FLAMMABILITY(FLASH POINT):

286 F degrees: fires involving this chemical should be extinguished with water, foam, carbon dioxide and/or dry chemical.

*UEL: Not available LEL: Not available

*REACTIVITY: Not available

*STABILITY: This compound is very stable under normal laboratory conditions.

*OTHER PHYSICAL DATA: Not available

-TOXICITY
========

*NIOSH REGISTRY NUMBER: TQ1362000

*TOXICITY: (abbreviations)

typ. dose	mode	specie	amount	unit	other
LD50	orl	rat	1315	mg/kg	
LDLo	skn	rbt	2000	mg/kg	

*AQTX/TLM96: Not available

*SAX TOXICITY EVALUATION: THR: Moderate via oral and dermal routes.

*CARCINOGENICITY:
Tumorigenic Data:
TDLo: TDLo: orl-rat 4380 mg/kg/83W-C
Review: IARC Cancer Review: Human Limited Evidence
IARC Cancer Review: Animal Sufficient Evidence
IARC probable human carcinogen (Group 2A) [610]
Status: EPA Carcinogen Assessment Group [610]
NTP anticipated human carcinogen [610]

*MUTAGENICITY: cyt-rat-orl 1080 mg/kg/26W-C

*TERATOGENICITY:
orl-rat TDLo:1675 mg/kg (MGN)
orl-mus TDLo:74 mg/kg (62D pre/1-10D preg)
scu-mus TDLo:143 mg/kg (21D post)

*STANDARDS, REGULATIONS & RECOMMENDATIONS:
OSHA: None
ACGIH: None
NIOSH Criteria Document: Recommended Exposure Limit to this compound-air:
TWA 0.001 mg/m3 [610]
NFPA Hazard Rating: Health (H): None
Flammability (F): None
Reactivity (R): None

*OTHER TOXICITY DATA:
Review: Toxicology Review-4

-OTHER DATA (Regulatory)
========================

*PROPER SHIPPING NAME (IATA): Polychlorinated biphenyls

*UN/ID NUMBER: UN2315

*HAZARD CLASS: 9 SUBSIDIARY RISK: None PACKING GROUP: II

*LABELS REQUIRED: Miscellaneous

*PACKAGING: PASSENGER: PKG. INSTR.: 907 MAXIMUM QUANTITY: 100 L
CARGO : PKG. INSTR.: 907 MAXIMUM QUANTITY: 220 L

*SPECIAL PROVISIONS: None

*USES: Not available

*COMMENTS: Not available

-HANDLING PROCEDURES
==========

*ACUTE/CHRONIC HAZARDS:
Toxic irritant. Hazardous decomposition products.

*MINIMUM PROTECTIVE CLOTHING:
If Tyvek-type disposable protective clothing is not worn during handling of this chemical, wear disposable Tyvek-type sleeves taped to your gloves.

*RECOMMENDED GLOVE MATERIALS:
Permeation data indicate that Viton gloves may provide protection to contact with this compound. Viton over latex gloves is recommended. However, if this chemical makes direct contact with your gloves, or if a tear, hole or puncture develops, remove them at once.

*RECOMMENDED RESPIRATOR:
Where the neat test chemical is weighed and diluted, wear a NIOSH-approved half face respirator equipped with a combination filter cartridge, i.e. organic vapor/acid gas/HEPA (specific for organic vapors, HCl, acid gas, SO2 and a high efficiency particulate filter).

*OTHER:
Since this chemical is a known or suspected carcinogen you should contact a physician for advice regarding the possible long term health effects and potential recommendation for medical monitoring. Recommendations from the physician will depend upon the specific compound, its chemical, physical and toxicity properties, the exposure level, length of exposure, and the route of exposure.

*STORAGE PRECAUTIONS:
You should protect this material from exposure to light, and store it in a refrigerator.

*SPILLS AND LEAKAGE:
If you should spill this chemical, use absorbent paper to pick up all liquid spill material. Your contaminated clothing and absorbent paper should be sealed in a vapor-tight plastic bag for eventual disposal. Solvent wash all contaminated surfaces with acetone followed by washing with a strong soap and water solution. Do not reenter the contaminated area until the Safety Officer (or other responsible person) has verified that the area has been properly cleaned.

*DISPOSAL AND WASTE TREATMENT:
You should dispose of all waste and contaminated materials associated with this chemical as specified by existing local, state and federal regulations concerning hazardous waste disposal. It is suggested that your contaminated materials should be destroyed

by incineration in a special, high temperature (>2000 degrees F), chemical incinerator facility.

-EMERGENCY PROCEDURES

*SKIN CONTACT:
IMMEDIATELY flood affected skin with water while removing and isolating all contaminated clothing. Gently wash all affected skin areas thoroughly with soap and water.
IMMEDIATELY call a hospital or poison control center even if no symptoms (such as redness or irritation) develop.
IMMEDIATELY transport the victim to a hospital for treatment after washing the affected areas.

*INHALATION:
IMMEDIATELY leave the contaminated area; take deep breaths of fresh air. IMMEDIATELY call a physician and be prepared to transport the victim to a hospital even if no symptoms (such as wheezing, coughing, shortness of breath, or burning in the mouth, throat, or chest) develop.
Provide proper respiratory protection to rescuers entering an unknown atmosphere. Whenever possible, Self-Contained Breathing Apparatus (SCBA) should be used; if not available, use a level of protection greater than or equal to that advised under Respirator Recommendation.

*EYE CONTACT:
First check the victim for contact lenses and remove if present. Flush victim's eyes with water or normal saline solution for 20 to 30 minutes while simultaneously calling a hospital or poison control center.
Do not put any ointments, oils, or medication in the victim's eyes without specific instructions from a physician.
IMMEDIATELY transport the victim after flushing eyes to a hospital even if no symptoms (such as redness or irritation) develop.

*INGESTION:
DO NOT INDUCE VOMITING. If the victim is conscious and not convulsing, give 1 or 2 glasses of water to dilute the chemical and IMMEDIATELY call a hospital or poison control center. Be prepared to transport the victim to a hospital if advised by a physician.
If the victim is convulsing or unconscious, do not give anything by mouth, ensure that the victim's airway is open and lay the victim on his/her side with the head lower than the body. DO NOT INDUCE VOMITING. IMMEDIATELY transport the victim to a hospital.

*SYMPTOMS: Not available

*FIREFIGHTING:
This compound is not very flammable but any fire involving this compound may produce dangerous vapors. You should evacuate the area. All firefighters should wear full-body protective clothing and use self-contained breathing apparatuses.
You should extinguish any fires involving this chemical with a dry chemical, carbon dioxide, foam, or halon extinguisher.

-SOURCES

*SOURCES:
Lewis, R.J., Sr. and R.L. Tatken, Eds. Registry of Toxic Effects of Chemical Substances. DHEW (NIOSH) Publication

No. 79-100. National Institute for Occupational Safety and Health. Cincinnati, OH. 1979. TQ1362000.

Sax, N.I. Dangerous Properties of Industrial Materials. 5th Ed. Van Nostrand Reinhold. New York. 1979. PG. 537.

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Division of Facilities Services

DOD Hazardous Material Information (ANSI Format)
For Cornell University Convenience Only

NITROGEN; NITROGEN NF

Section 1 - Product and Company Identification	Section 9 - Physical & Chemical Properties
Section 2 - Compositon/Information on Ingredients	Section 10 - Stability & Reactivity Data
Section 3 - Hazards Identification Including Emergency Overview	Section 11 - Toxicological Information
Section 4 - First Aid Measures	Section 12 - Ecological Information
Section 5 - Fire Fighting Measures	Section 13 - Disposal Considerations
Section 6 - Accidental Release Measures	Section 14 - MSDS Transport Information
Section 7 - Handling and Storage	Section 15 - Regulatory Information
Section 8 - Exposure Controls & Personal Protection	Section 16 - Other Information

Section 1 - Product and Company Identification
NITROGEN; NITROGEN NF

Product Identification: NITROGEN; NITROGEN NF
Date of MSDS: 08/24/1989 **Technical Review Date:** 07/18/1994
FSC: 6830 **NIIN:** 00-244-2741
Submitter: G AW
Status Code: C
MFN: 01
Article: N
Kit Part: N

Manufacturer's Information

Manufacturer's Name: AIR LIQUIDE AMERICA CORPORATION
Post Office Box: 3047
Manufacturer's Address1: N/K

Manufacturer's Address2: HOUSTON, TX 77253
Manufacturer's Country: US
General Information Telephone: 713-896-2140
Emergency Telephone: 713-896-2140
Emergency Telephone: 713-896-2140
MSDS Preparer's Name: N/K
Proprietary: N
Reviewed: Y
Published: Y
CAGE: AIRLI
Special Project Code: N

Item Description

Item Name: NITROGEN,TECHNICAL
Item Manager:
Specification Number: NK
Type/Grade/Class: NK
Unit of Issue:
Unit of Issue Quantity:
Type of Container: CYLINDER

Contractor Information

Contractor's Name: AIR LIQUIDE AMERICA CORPORATION
Post Office Box: 3047
Contractor's Address1: N/K
Contractor's Address2: HOUSTON, TX 77253
Contractor's Telephone: 713-896-2140
Contractor's CAGE: AIRLI

Section 2 - Compositon/Information on Ingredients
NITROGEN; NITROGEN NF

Ingredient Name: NITROGEN
Ingredient CAS Number: 7727-37-9 **Ingredient CAS Code:** M
RTECS Number: QW9700000 **RTECS Code:** M
=WT: =WT Code:
=Volume: =Volume Code:
>WT: >WT Code:
>Volume: >Volume Code:
<WT: <WT Code:
<Volume: <Volume Code:
% Low WT: % Low WT Code:
% High WT: % High WT Code:
% Low Volume: % Low Volume Code:
% High Volume: % High Volume Code:
% Text: 100
% Enviromental Weight:
Other REC Limits: NONE RECOMMENDED

OSHA PEL: NOT ESTABLISHED **OSHA PEL Code:** M
OSHA STEL: OSHA STEL Code:
ACGIH TLV: NOT ESTABLISHED **ACGIH TLV Code:** M
ACGIH STEL: N/P **ACGIH STEL Code:**
EPA Reporting Quantity:
DOT Reporting Quantity:
Ozone Depleting Chemical: N

Section 3 - Hazards Identification, Including Emergency Overview
NITROGEN; NITROGEN NF

Health Hazards Acute & Chronic: NITROGEN IS NONTOXIC, BUT MAY CAUSE SUFFOCATION BY DISPLACING THE OXYGEN IN THE AIR. EXPOSURE TO OXYGEN-DEFICIENT ATMOSPHERES MAY CAUSE DIZZINESS, NAUSEA, VOMITING, DIMINISHED MENTAL ALERTNESS, LOSS O F CONSCIOUSNESS, AND DEATH. IT SHOULD BE RECOGNIZED THAT COLLAPSE & ASPHYXIATION MAY OCCUR WITHOUT EXPERIENCING SYMPTOM.

Signs & Symptoms of Overexposure:
N/K

Medical Conditions Aggravated by Exposure:
N/K

LD50 LC50 Mixture: N/K

Route of Entry Indicators:
Inhalation: YES
Skin: N/P
Ingestion: N/P

Carcenogenicity Indicators
NTP: NO
IARC: NO
OSHA: NO

Carcinogenicity Explanation: N/K

Section 4 - First Aid Measures
NITROGEN; NITROGEN NF

First Aid:
PERSONS SUFFERING FROM LACK OF OXYGEN SHOULD BE MOVED INTO FRESH AIR. IF VICTIM IS NOT BREATHING, ADMINISTER ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, ADMINISTER OXYGEN. OBTAIN PROMPT MEDICAL ATTENTION. SELF CONTAINED BREATHING APPARATUS MAY BE REQUIRED FOR RESCUE WORKERS.

Section 5 - Fire Fighting Measures
NITROGEN; NITROGEN NF

Fire Fighting Procedures:
SIMPLE ASPHYXIANT (DISPLACES OXYGEN).IF POSSIBLE,REMOVE NITROGEN CYLINDERS FROM FIRE AREA/COOL W/H2O TO AVOID EXCESS PRESSR BLDUP.SCBA

MAY BE REQ'D FOR RESCUERS
Unusual Fire or Explosion Hazard:
PRESSURE CAN BUILD UP DUE TO HEAT & CYLINDER MAY EXPLODE IF PRESSURE RELIEF DEVICES SHOULD FAIL TO RELIEVE PRESSURE.
Extinguishing Media:
MATERIAL IS NONFLAMMABLE. NITROGEN NEITHER BURNS NOR SUPPORTS COMBUSTION. USE EXTINGUISHING MEDIA FOR SURROUNDING FIRE.
Flash Point: Flash Point Text: N/R

Autoignition Temperature:
Autoignition Temperature Text: N/K
Lower Limit(s): N/R
Upper Limit(s): N/R

Section 6 - Accidental Release Measures
NITROGEN; NITROGEN NF

Spill Release Procedures:
EVACUATE UNNEEDED PERSONNEL FROM AREA.SHUT OFF SOURCE IF POSSIBLE.VENT ENCLOSED AREA/REMOVE CYLNDR TO OUTDOOR LOCATION TO PREVENT FORMATION OF OXYGEN-DEFICIENT ATMOSPHERES.IF LEAKING FROM CONTAINER/VA LVE,CONTACT CLOSEST BIG THREE INDUSTRIES LOCATION.

Section 7 - Handling and Storage
NITROGEN; NITROGEN NF

Handling and Storage Precautions:

Other Precautions:

Section 8 - Exposure Controls & Personal Protection
NITROGEN; NITROGEN NF

Repiratory Protection:
USE SELF-CONTAINED BREATHING APPARATUS OR POSITIVE PRESSURE AIR LINE WITH MASK IN OXYGEN-DEFFICIENT ATMOSPHERES. ADEQUATE TO AVOID LOWERING OXYGEN CONTENT TO BELOW 19.5% (OXYGEN-DEFICIENT ATMOPHERE).
Ventilation:
LOCAL EXHAUST: YES. MECHANICAL: YES.
Protective Gloves:
N/R
Eye Protection: SFTY GLASSES RECOMM-HIGH PRESSR CYLNDRS
Other Protective Equipment: SAFETY SHOES WHEN HANDLING CYLINDERS.
Work Hygenic Practices: N/K
Supplemental Health & Safety Information: ** FURTHER INFORMATION ABOURT NITROGEN CAN BE FOUND IN THE FOLLOW PAMPHLETS PUBLISHED BY: THE COMPRESSED GAS ASSOCIATEION (CGA), 1235 JEFFERSON DAVIS HIGHWAY, ARLINGTON, VA 22202, 703-979-4341, G-10.1 , P-1, P-9, P-14, SB-2.

Section 9 - Physical & Chemical Properties
NITROGEN; NITROGEN NF

HCC:

NRC/State License Number: N/K
Net Property Weight for Ammo: N/K
Boiling Point: Boiling Point Text: -320F,-196C
Melting/Freezing Point: Melting/Freezing Text: N/K
Decomposition Point: Decomposition Text: N/K
Vapor Pressure: N/R **Vapor Density:** *
Percent Volatile Organic Content:
Specific Gravity: 0.967 (AIR=1)
Volatile Organic Content Pounds per Gallon:
pH: N/K
Volatile Organic Content Grams per Liter:
Viscosity: N/K
Evaporation Weight and Reference: N/R
Solubility in Water: 2.33SCC/100 CC @ 32F
Appearance and Odor: COLORLESS, ODORLESS, TASTELESS GAS
Percent Volatiles by Volume: N/K
Corrosion Rate: N/K

Section 10 - Stability & Reactivity Data
NITROGEN; NITROGEN NF

Stability Indicator: YES
Materials to Avoid:
NONE
Stability Condition to Avoid:
NONE * VAPOR DENSITY:0.07245 LB/CU FT @ 70F & 1 ATM
Hazardous Decomposition Products:
NONE
Hazardous Polymerization Indicator: NO
Conditions to Avoid Polymerization:
NONE

Section 11 - Toxicological Information
NITROGEN; NITROGEN NF

Toxicological Information:
N/P

Section 12 - Ecological Information
NITROGEN; NITROGEN NF

Ecological Information:
N/P

Section 13 - Disposal Considerations
NITROGEN; NITROGEN NF

Waste Disposal Methods:
DO NOT ATTEMPT TO DISPOSE OF RESIDUAL OR UNUSED QUANTITIES. RETURN TO YOUR SUPPLIER FOR DISPOSAL. FOR EMERGENCY DISPOSAL, SECURE CYLINDER AND VENT SLOWLY TO THE ATMOSPHERE IN A WELL-VENTED AREA OR OUT DOORS.

Section 14 - MSDS Transport Information
NITROGEN; NITROGEN NF

Transport Information:

N/P

Section 15 - Regulatory Information
NITROGEN; NITROGEN NF

SARA Title III Information:
N/P
Federal Regulatory Information:
N/P
State Regulatory Information:
N/P

Section 16 - Other Information
NITROGEN; NITROGEN NF

Other Information:
N/P

HMIS Transportation Information

Product Identification: NITROGEN; NITROGEN NF
Transporation ID Number: 60275
Responsible Party CAGE: AIRLI
Date MSDS Prepared: 08/24/1989
Date MSDS Reviewed: 07/18/1994
MFN: 07/18/1994
Submitter: G AW
Status Code: C

Container Information
Unit of Issue:
Container Quantity:
Type of Container: CYLINDER
Net Unit Weight: N/K

Article without MSDS: N
Technical Entry NOS Shipping Number: N/K
Radioactivity: N/K
Form:
Net Explosive Weight: N/K
Coast Guard Ammunition Code: N/K
Magnetism: N/P
AF MMAC Code: NK
DOD Exemption Number: N/K
Limited Quantity Indicator:
Multiple Kit Number: 0
Kit Indicator: N
Kit Part Indicator: N
Review Indicator: Y
Additional Data:
N/K

Department of Transportation Information

DOT Proper Shipping Name: NITROGEN, COMPRESSED

DOT PSN Code: KLZ
Symbols:
DOT PSN Modifier:
Hazard Class: 2.2
UN ID Number: UN1066
DOT Packaging Group:
Label: NONFLAMMABLE GAS
Special Provision(s):
Packaging Exception: 306
Non Bulk Packaging: 302
Bulk Packaging: 314,315
Maximimum Quanity in Passenger Area: 75 KG
Maximimum Quanity in Cargo Area: 150 KG
Stow in Vessel Requirements: A
Requirements Water/Sp/Other:

IMO Detail Information

IMO Proper Shipping Name: NITROGEN, COMPRESSED
IMO PSN Code: KSR
IMO PSN Modifier:
IMDG Page Number: 2163
UN Number: 1066
UN Hazard Class: 2(2.2)
IMO Packaging Group: -
Subsidiary Risk Label: -
EMS Number: 2-04
Medical First Aid Guide Number: NON

IATA Detail Information

IATA Proper Shipping Name: NITROGEN, COMPRESSED
IATA PSN Code: SBP
IATA PSN Modifier:
IATA UN Id Number: 1066
IATA UN Class: 2.2
Subsidiary Risk Class:
UN Packaging Group:
IATA Label: NON-FLAMMABLE GAS
Packaging Note for Passengers: 200
Maximum Quantity for Passengers: 75KG
Packaging Note for Cargo: 200
Maximum Quantity for Cargo: 150KG
Exceptions:

AFI Detail Information

AFI Proper Shipping Name: NITROGEN, COMPRESSED
AFI Symbols:
AFI PSN Code: SBP
AFI PSN Modifier:
AFI UN Id Number: UN1066
AFI Hazard Class: 2.2
AFI Packing Group: N/A
AFI Label:

Special Provisions: P5
Back Pack Reference: A6.3, A6.6

HAZCOM Label Information

Product Identification: NITROGEN; NITROGEN NF
CAGE: AIRLI
Assigned Individual: N
Company Name: AIR LIQUIDE AMERICA CORPORATION
Company PO Box: 3047
Company Street Address1: N/K
Company Street Address2: HOUSTON, TX 77253 US
Health Emergency Telephone: 713-896-2140
Label Required Indicator: Y
Date Label Reviewed: 12/16/1998
Status Code: C
Manufacturer's Label Number:
Date of Label: 12/16/1998
Year Procured: N/K
Organization Code: G
Chronic Hazard Indicator: N/P
Eye Protection Indicator: N/P
Skin Protection Indicator: N/P
Respiratory Protection Indicator: N/P
Signal Word: N/P
Health Hazard:
Contact Hazard:
Fire Hazard:
Reactivity Hazard:

8/7/2002 9:30:32 PM

PHIBRO ENERGY SUB OF PHILLIP BROTHERS -- CRUDE OIL - CRUDE OIL
MATERIAL SAFETY DATA SHEET
NSN: 9140010743346
Manufacturer's CAGE: 2Y747
Part No. Indicator: A
Part Number/Trade Name: CRUDE OIL

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General Information

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Item Name: CRUDE OIL
Company's Name: PHIBRO ENERGY INC SUB OF PHILLIP BROTHERS INC
Company's Street: 600 STEAMBOAT ROAD
Company's City: GREENWICH
Company's State: CT
Company's Country: US
Company's Zip Code: 06830-7149
Company's Emerg Ph #: 713-923-6641/800-424-9300
Company's Info Ph #: 203-661-4770
Distributor/Vendor # 1: AURAL RESEARCH (714-596-6112)
Distributor/Vendor # 1 Cage: 52636
Record No. For Safety Entry: 001
Tot Safety Entries This Stk#: 001
Status: SMU
Date MSDS Prepared: 18DEC91
Safety Data Review Date: 19JUN92
Supply Item Manager: KY
MSDS Preparer's Name: SUE BOTTOM
MSDS Serial Number: BMZJT
Hazard Characteristic Code: F4
Unit Of Issue: GL

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Ingredients/Identity Information

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Proprietary: NO
Ingredient: BENZENE (SARA III)
Ingredient Sequence Number: 01
Percent: 0.1-5%
NIOSH (RTECS) Number: CY1400000
CAS Number: 71-43-2
OSHA PEL: 1PPM/5STEL;1910.1028
ACGIH TLV: 10 PPM; A2; 9192
Other Recommended Limit: NONE SPECIFIED

Proprietary: NO
Ingredient: BUTANE
Ingredient Sequence Number: 02
Percent: 1-7 %
NIOSH (RTECS) Number: EJ4200000
CAS Number: 106-97-8
OSHA PEL: 800 PPM
ACGIH TLV: 800 PPM; 9192
Other Recommended Limit: NONE SPECIFIED

Proprietary: NO
Ingredient: CYCLOHEXANE (SARA III)
Ingredient Sequence Number: 03
Percent: <1-4 %
NIOSH (RTECS) Number: GU6300000
CAS Number: 110-82-7
OSHA PEL: 300 PPM
ACGIH TLV: 300 PPM, 9192
Other Recommended Limit: NONE SPECIFIED

Proprietary: NO
Ingredient: CYCLOPENTANE
Ingredient Sequence Number: 04
Percent: <1-2 %
NIOSH (RTECS) Number: GY2390000
CAS Number: 287-92-3
OSHA PEL: 600 PPM
ACGIH TLV: 600 PPM; 9192
Other Recommended Limit: NONE SPECIFIED

Proprietary: NO
Ingredient: ETHYL BENZENE (SARA III)
Ingredient Sequence Number: 05
Percent: <1-3%
NIOSH (RTECS) Number: DA0700000
CAS Number: 100-41-4
OSHA PEL: 100 PPM/125 STEL
ACGIH TLV: 100 PPM/125STEL 9192
Other Recommended Limit: NONE SPECIFIED

Proprietary: NO
Ingredient: N-HEPTANE
Ingredient Sequence Number: 06
Percent: 1-5 %
NIOSH (RTECS) Number: MI7700000
CAS Number: 142-82-5
OSHA PEL: 500 PPM/500 STEL
ACGIH TLV: 400 PPM/500STEL;9293
Other Recommended Limit: NONE SPECIFIED

Proprietary: NO
Ingredient: HEXANE (N-HEXANE)
Ingredient Sequence Number: 07
Percent: 2-8 %
NIOSH (RTECS) Number: MN9275000
CAS Number: 110-54-3
OSHA PEL: 500 PPM
ACGIH TLV: 50 PPM; 9293
Other Recommended Limit: NONE SPECIFIED

Proprietary: NO
Ingredient: HYDROGEN SULFIDE (SARA III)
Ingredient Sequence Number: 08
Percent: <0.1-3%
NIOSH (RTECS) Number: MX1225000
CAS Number: 7783-06-4
OSHA PEL: (C),20 PPM
ACGIH TLV: 10 PPM/15 STEL; 9293
Other Recommended Limit: NONE SPECIFIED

Proprietary: NO
Ingredient: METHYLCYCLOHEXANE
Ingredient Sequence Number: 09
Percent: 1-4 %
NIOSH (RTECS) Number: GV6125000
CAS Number: 108-87-2
OSHA PEL: 500 PPM
ACGIH TLV: 400 PPM; 9293
Other Recommended Limit: NONE SPECIFIED

Proprietary: NO
Ingredient: NONANE
Ingredient Sequence Number: 10
Percent: 1-4 %

NIOSH (RTECS) Number: RA6115000
CAS Number: 111-84-2
OSHA PEL: 200 PPM
ACGIH TLV: 200 PPM; 9192
Other Recommended Limit: NONE SPECIFIED

Proprietary: NO
Ingredient: OCTANE
Ingredient Sequence Number: 11
Percent: 1-5 %
NIOSH (RTECS) Number: RG8400000
CAS Number: 111-65-9
OSHA PEL: 500 PPM/375 STEL
ACGIH TLV: 300 PPM/375STEL;9293
Other Recommended Limit: NONE SPECIFIED

Proprietary: NO
Ingredient: PENTANE
Ingredient Sequence Number: 12
Percent: 1-6 %
NIOSH (RTECS) Number: RZ9450000
CAS Number: 109-66-0
OSHA PEL: 1000 PPM/750 STEL
ACGIH TLV: 600 PPM/750STEL;9293
Other Recommended Limit: NONE SPECIFIED

Proprietary: NO
Ingredient: PROPANE
Ingredient Sequence Number: 13
Percent: 1-4 %
NIOSH (RTECS) Number: TX2275000
CAS Number: 74-98-6
OSHA PEL: 1000 PPM
ACGIH TLV: ASPHYXIANT; 9192
Other Recommended Limit: NONE SPECIFIED

Proprietary: NO
Ingredient: SULFUR
Ingredient Sequence Number: 14
Percent: <0.1-3%
NIOSH (RTECS) Number: WS4250000
CAS Number: 7704-34-9
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE SPECIFIED

Proprietary: NO
Ingredient: TOLUENE (SARA III)
Ingredient Sequence Number: 15
Percent: <1-2 %
NIOSH (RTECS) Number: XS5250000
CAS Number: 108-88-3
OSHA PEL: 200 PPM/150 STEL
ACGIH TLV: 50 PPM; 9293
Other Recommended Limit: NONE SPECIFIED

Proprietary: NO
Ingredient: XYLENES (O-,M-,P- ISOMERS) (SARA III)
Ingredient Sequence Number: 16
Percent: <1-3 %
NIOSH (RTECS) Number: ZE2100000
CAS Number: 1330-20-7
OSHA PEL: 100 PPM/150 STEL
ACGIH TLV: 100 PPM/150STEL;9192

Other Recommended Limit: NONE SPECIFIED

Proprietary: NO
Ingredient: HEXANE (ISOMERS OTHER THAN N-HEXANE)
Ingredient Sequence Number: 17
Percent: 1-5 %
NIOSH (RTECS) Number: 1002929HI
OSHA PEL: 500 PPM
ACGIH TLV: 500 PPM
Other Recommended Limit: NONE SPECIFIED

Physical/Chemical Characteristics

Appearance And Odor: DARK BROWN/BLACK LIQUID WITH HYDROCARBON/SULFIDE ODOR
Boiling Point: >1000F,>538
Melting Point: NOT GIVEN
Vapor Pressure (MM Hg/70 F): 0.6 - 10
Vapor Density (Air=1): > 1
Specific Gravity: 0.7 - 1.1 @60F
Decomposition Temperature: UNKNOWN
Evaporation Rate And Ref: NOT GIVEN
Solubility In Water: SLIGHT
Percent Volatiles By Volume: 40-60%
Corrosion Rate (IPY): UNKNOWN
Autoignition Temperature: 500F

Fire and Explosion Hazard Data

Flash Point: -40 TO 200F
Lower Explosive Limit: 0.4 %
Upper Explosive Limit: 15 %
Extinguishing Media: DRY CHEMICAL, HALON, FOAM AND CARBON DIOXIDE ARE PREFERRED. FOAM AND WATER FOG CAN CAUSE FROTHING.
Special Fire Fighting Proc: PRODUCT WILL RELEASE FLAMMABLE VAPORS WHICH CAN BURN IN OPEN OR BE EXPLOSIVE IN CONFINED SPACE. PUMP CONTENTS FROM TANK AND COOL TANKS WITH WATER.
Unusual Fire And Expl Hazrds: IMPROPER USE OF WATER MAY CAUSE FROTHING AND SPREAD FIRE OVER LARGER AREA. VAPOR OR GAS MAY SPREAD TO DISTANT IGNITION SOURCES AND FLASH BACK.

Reactivity Data

Stability: YES
Cond To Avoid (Stability): HEAT, SPARKS, OPEN FLAME, STATIC ELECTRICITY OR OTHER POTENTIAL IGNITION SOURCES SHOULD BE AVOIDED. DO NOT SWITCH LOAD.
Materials To Avoid: AVOID STRONG OXIDIZING AGENTS (PEROXIDE, DICHROMATE, PERMANGANATE, CHLORINE, ETC), STRONG ACIDS, CAUSTICS AND HALOGENS.

Health Hazard Data

Precautions for Safe Handling and Use

Control Measures

Transportation Data

Trans Data Review Date: 92171
DOT PSN Code: LKR
DOT Proper Shipping Name: PETROLEUM CRUDE OIL
DOT Class: 3
DOT ID Number: UN1267

DOT Pack Group: II
DOT Label: FLAMMABLE LIQUID
IMO PSN Code: LLR
IMO Proper Shipping Name: PETROLEUM CRUDE OIL
IMO Regulations Page Number: 3271
IMO UN Number: 1267
IMO UN Class: 3.2
IMO Subsidiary Risk Label: -
IATA PSN Code: TIH
IATA UN ID Number: 1267
IATA Proper Shipping Name: PETROLEUM CRUDE OIL
IATA UN Class: 3
IATA Label: FLAMMABLE LIQUID
AFI PSN Code: TIH
AFI Prop. Shipping Name: PETROLEUM CRUDE OIL
AFI Class: 3
AFI ID Number: UN1267
AFI Pack Group: II
AFI Basic Pac Ref: 7-7
Additional Trans Data: REPORTABLE QUANTITY FOR BENZENE 10 LB; FOR XYLENE 1000 LB.

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Disposal Data

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Label Data

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Label Required: YES
Technical Review Date: 19JUN92
Label Date: 18DEC91
MFR Label Number: NONE
Label Status: G
Common Name: CRUDE OIL
Chronic Hazard: YES
Signal Word: WARNING!
Acute Health Hazard-Moderate: X
Contact Hazard-Moderate: X
Fire Hazard-Moderate: X
Reactivity Hazard-None: X
Special Hazard Precautions: CONTAINS BENZENE--CANCER HAZARD. CAN CAUSE KIDNEY, LIVER AND BLOOD DISORDERS. PRODUCT MAY CONTAIN OR RELEASE HYDROGEN SULFIDE. H2S IS A HIGHLY TOXIC, HIGHLY FLAMMABLE GAS WHICH CAN BE FATAL IF INHALED AT CERTAIN CONCENTRATIONS. MAY CAUSE IRRITATION TO EYES, SKIN AND RESPIRATORY SYSTEM. AVOID LIQUID, MIST AND VAPOR CONTACT. HARMFUL OR FATAL IF SWALLOWED. ASPIRATION HAZARD, CAN ENTER LUNGS AND CAUSE DAMAGE. MAY CAUSE IRRITATION OR BE HARMFUL IF INHALED OR ABSORBED THROUGH THE SKIN. FLAMMABLE/COMBUSTIBLE LIQUID. VAPORS MAY EXPLODE.
Protect Eye: Y
Protect Skin: Y
Protect Respiratory: Y
Label Name: PHIBRO ENERGY INC SUB OF PHILLIP BROTHERS INC
Label Street: 600 STEAMBOAT ROAD
Label City: GREENWICH
Label State: CT
Label Zip Code: 06830-7149
Label Country: US
Label Emergency Number: 713-923-6641/800-424-9300

Division of Facilities Services

DOD Hazardous Material Information (ANSI Format)
For Cornell University Convenience Only

HYDROGEN, OR LIQUID HYDROGEN

Section 1 - Product and Company Identification	Section 9 - Physical & Chemical Properties
Section 2 - Compositon/Information on Ingredients	Section 10 - Stability & Reactivity Data
Section 3 - Hazards Identification Including Emergency Overview	Section 11 - Toxicological Information
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Section 7 - Handling and Storage	Section 15 - Regulatory Information
Section 8 - Exposure Controls & Personal Protection	Section 16 - Other Information

Section 1 - Product and Company Identification
HYDROGEN, OR LIQUID HYDROGEN

Product Identification: HYDROGEN, OR LIQUID HYDROGEN
Date of MSDS: 04/13/1977 **Technical Review Date:** 10/14/1994
FSC: 5895 **NIIN:** 01-047-0233
Submitter: D DG
Status Code: C
MFN: 01
Article: N
Kit Part: N

Manufacturer's Information

Manufacturer's Name: AIR PRODUCTS AND CHEMICALS INC.
Manufacturer's Address1: 7201 HAMILTON BLVD
Manufacturer's Address2: ALLENTOWN, PA 18195-1501

Manufacturer's Country: US
General Information Telephone: 215-481-6311 OR 215-481-7711
Emergency Telephone: 800-523-9374 (800-322-9092 IN PA)
Emergency Telephone: 800-523-9374 (800-322-9092 IN PA)
MSDS Preparer's Name: NK
Proprietary: N
Reviewed: Y
Published: Y
CAGE: 00742
Special Project Code: N

Item Description

Item Name: CHARGING ASSEMBLY,VAPOR PRESSURE GAGE
Item Manager: S9E
Specification Number: N/R
Type/Grade/Class: NK
Unit of Issue: EA
Unit of Issue Quantity: 1
Type of Container: CYLINDER

Preparer Information

Preparer's Name: AIR PRODUCTS AND CHEMICALS INC
Preparer's Address1: 7201 HAMILTON BLVD
Preparer's Address2: ALLENTOWN, PA 18195-1501
Preparer's CAGE: 00742
Assigned Individual: N

Contractor Information

Contractor's Name: AIR PRODUCTS AND CHEMICALS INC
Contractor's Address1: 7201 HAMILTON BLVD
Contractor's Address2: ALLENTOWN, PA 18195-1501
Contractor's Telephone: 800-345-3148/610-481-4911
Contractor's CAGE: 00742

Contractor Information

Contractor's Name: HELIX TECHNOLOGY INC. CTI-CRYOGENICS DI
Contractor's Address1: UNKNOWN
Contractor's Address2: UNKNOWN, NK 00000
Contractor's Telephone: UNKNOWN
Contractor's CAGE: 31949

Section 2 - Compositon/Information on Ingredients
HYDROGEN, OR LIQUID HYDROGEN

Ingredient Name: HYDROGEN
Ingredient CAS Number: 1333-74-0 **Ingredient CAS Code:** M

RTECS Number: MW8900000 **RTECS Code:** M
=WT: =WT Code:
=Volume: =Volume Code:
>WT: >WT Code:
>Volume: >Volume Code:
<WT: <WT Code:
<Volume: <Volume Code:
% Low WT: % Low WT Code:
% High WT: % High WT Code:
% Low Volume: % Low Volume Code:
% High Volume: % High Volume Code:
% Text: N/K
% Enviromental Weight:
Other REC Limits: NK
OSHA PEL: NOT ESTABLISHED **OSHA PEL Code:** M
OSHA STEL: OSHA STEL Code:
ACGIH TLV: NOT ESTABLISHED **ACGIH TLV Code:** M
ACGIH STEL: N/P **ACGIH STEL Code:**
EPA Reporting Quantity:
DOT Reporting Quantity:
Ozone Depleting Chemical: N

Section 3 - Hazards Identification, Including Emergency Overview
HYDROGEN, OR LIQUID HYDROGEN

Health Hazards Acute & Chronic: HYDROGEN IS NONTOXIC AND CLASSFIED AS A SIMPLE ASPHYXIANT BUT IS EXTEMELY FLAMMABLE. DO NOT ENTER AREAS CONTAINING FLAMMABLE MIXTURES DUE TO THE IMMEDIATE FIRE AND EXPLOSION HAZARD.

Signs & Symptoms of Overexposure:
SYMPTOMS OF ANOXIA OCCUR ONLY WHEN GAS CONCENTRATIONS ARE WITHIN THE FLAMMABLE RANGE AND THE MIXTURE HAS NOT IGNITED. CONTACT OF SKIN WITH LIQUID HYDROGEN OR COLD GAS VAPORS CAN CAUSE CRYOGENIC (EXTRE ME LOW TEMPERATURE) BURNS AND FREEZE TISSUES.

Medical Conditions Aggravated by Exposure:
UNKNOWN

LD50 LC50 Mixture: N/K

Route of Entry Indicators:
Inhalation: YES
Skin: YES
Ingestion: NO

Carcenogenicity Indicators
NTP: NO
IARC: NO
OSHA: NO

Carcinogenicity Explanation: N/P

Section 4 - First Aid Measures
HYDROGEN, OR LIQUID HYDROGEN

First Aid:
FROZEN TISSUES SHOULD BE FLOODED OR SOAKED WITH TEPID WATER, NOT HOT. DEEPER BURNS AND THERMAL INJURIES SHOULD BE SEEN PROMPTLY BY A PHYSICIAN. INHALATION:REMOVE TO FRESH AIR, PROVIDE CPR/OXYGEN IF NE CESSARY. SEEK MEDICAL HELP IMMEDIATEY.

Section 5 - Fire Fighting Measures
HYDROGEN, OR LIQUID HYDROGEN

Fire Fighting Procedures:
SHUT OFF SOURCE OF HYDROGEN. WHEN POSSIBLE, ALLOW FIRE TO BURN ITSELF OUT. SPRAYWATER ON ADJOINING EQUIP TO KEEP IT COOL.
Unusual Fire or Explosion Hazard:
EASILY IGNITED;MIN IGNITION ENERGY IS LOW(. 02MJ)&FLAMMABLE RANGE IS WIDE. FLAME PROPOGATES AT RAPID RATE.EXPLOSION HAZ. IF FIRE REIGNITED & HYD SOURCE NOT SHUT
Extinguishing Media:
DRY CHEMICAL, CARBON DIOXIDE, OR HALON
Flash Point: Flash Point Text: N/K FLAMM GAS

Autoignition Temperature:
Autoignition Temperature Text: NK
Lower Limit(s): 4.04%
Upper Limit(s): 74.2%

Section 6 - Accidental Release Measures
HYDROGEN, OR LIQUID HYDROGEN

Spill Release Procedures:
DO NOT ENTER AREAS CONTAINING FLAMMABLE MIXTURES OF HYDROGEN IN AIR. VENTILATE ENCLOSED AREAS. ELIMINATE SOURCES OF IGNITION. WEAR RESPIRATORY PROTEC, MOVE LEAKING GAS CYLINDER OUT OF DOORS IF LEAK IS SMALL. CONSULT AIR PRODUCTS FOR ADDED ASSISTANCE.

Section 7 - Handling and Storage
HYDROGEN, OR LIQUID HYDROGEN

Handling and Storage Precautions:

Other Precautions:

Section 8 - Exposure Controls & Personal Protection
HYDROGEN, OR LIQUID HYDROGEN

Repiratory Protection:
NONE NORMALLY REQUIRED. USE NIOSH APPROVED SELF-CONTAINED BREATHING APPARATUS IF TLV IS EXCEEDED OR USING IN CONFINED SPACES.
Ventilation:
NATURAL OR MECHANICAL WHERE GAS OR VAPOR IS PRESENT.

Protective Gloves:
LEATHER
Eye Protection: SAFETY GLASSES OR GOGGLES
Other Protective Equipment: WORK SHOES FOR HANDLING CYLINDERS.
Work Hygenic Practices: DO NOT SMOKE WHILE WORKING WITH THIS PRODUCT.
Supplemental Health & Safety Information: HYDROGEN CAN BURN WITH ALMOST AN INVISIBLE FLAME OF LOW THERMAL RADIATION.PEOPLE HAVE UNKNOWINGLY WALKED INTO HYDROGEN FLAMES. POTENTIAL EXPLOSION HAZARD FROM REIGNITION IF FIRE IS EXTINGUISHED WITHOU T SHUTTING OFF HYDROGEN SOURCE. HYDROGEN GAS IS BUOYANT AND CAN ACCUMULATE IN THE UPPER SECTIONS OF ENCLOSED SPACES.

Section 9 - Physical & Chemical Properties
HYDROGEN, OR LIQUID HYDROGEN

HCC: G2
NRC/State License Number: NK
Net Property Weight for Ammo: NK
Boiling Point: Boiling Point Text: -423F,-253C
Melting/Freezing Point: Melting/Freezing Text: NK
Decomposition Point: Decomposition Text: N/K
Vapor Pressure: N/K **Vapor Density:** SEE BELOW
Percent Volatile Organic Content:
Specific Gravity: .0696 @68F
Volatile Organic Content Pounds per Gallon:
pH: N/R
Volatile Organic Content Grams per Liter:
Viscosity: NK
Evaporation Weight and Reference: GAS
Solubility in Water: SLIGHT
Appearance and Odor: BOTH LIQUID AND GASEOUS HYDROGEN ARE COLORLESS AND ODORLESS.
Percent Volatiles by Volume: 100
Corrosion Rate: NK

Section 10 - Stability & Reactivity Data
HYDROGEN, OR LIQUID HYDROGEN

Stability Indicator: YES
Materials to Avoid:
OXIDIZING MATERIALS. SOME STEELS ARE SUSCEPTIBLE TO HYDROGENATTACK OR EMBRITTLEMENT AT HIGH TEMPERATURE AND PRESSURE.
Stability Condition to Avoid:
SOURCES OF IGNITION, SPARKS, FLAMES, HOT OBJECTS
Hazardous Decomposition Products:
NONE
Hazardous Polymerization Indicator: NO
Conditions to Avoid Polymerization:
NONE

Section 11 - Toxicological Information
HYDROGEN, OR LIQUID HYDROGEN

Toxicological Information:

N/P

Section 12 - Ecological Information
HYDROGEN, OR LIQUID HYDROGEN

Ecological Information:
N/P

Section 13 - Disposal Considerations
HYDROGEN, OR LIQUID HYDROGEN

Waste Disposal Methods:
DO NOT DISPOSE OF CYLINDERS WITH RESIDUAL HYDROGEN. RETURN CYLINDERS TO AIR PRODUCTS WITH POSITIVE RESIDUAL PRESSURE, CYL VALVES TIGHTLY CLOSED, & VALVE CAP IN PLACE. CONTACT AIR PRODUCTS FOR ASSISTAN CE.

Section 14 - MSDS Transport Information
HYDROGEN, OR LIQUID HYDROGEN

Transport Information:
N/P

Section 15 - Regulatory Information
HYDROGEN, OR LIQUID HYDROGEN

SARA Title III Information:
N/P
Federal Regulatory Information:
N/P
State Regulatory Information:
N/P

Section 16 - Other Information
HYDROGEN, OR LIQUID HYDROGEN

Other Information:
N/P

HMIS Transportation Information

Product Identification: HYDROGEN, OR LIQUID HYDROGEN
Transporation ID Number: 102733
Responsible Party CAGE: 00742
Date MSDS Prepared: 04/13/1977
Date MSDS Reviewed: 10/14/1994
MFN: 10/14/1994
Submitter: D DG
Status Code: C

Container Information
- **Unit of Issue:** EA
- **Container Quantity:** 1
- **Type of Container:** CYLINDER
- **Net Unit Weight:** N/K

Article without MSDS: N
Technical Entry NOS Shipping Number:
Radioactivity: NK
Form:

Net Explosive Weight: NK
Coast Guard Ammunition Code: NK
Magnetism: N/P
AF MMAC Code: NK
DOD Exemption Number: NK
Limited Quantity Indicator:
Multiple Kit Number: 0
Kit Indicator: N
Kit Part Indicator: N
Review Indicator: Y
Additional Data:
FOR LIQUIFIED HYDROGEN GAS USE UN 1966.

Department of Transportation Information

DOT Proper Shipping Name: HYDROGEN, COMPRESSED
DOT PSN Code: HLR
Symbols:
DOT PSN Modifier:
Hazard Class: 2.1
UN ID Number: UN1049
DOT Packaging Group:
Label: FLAMMABLE GAS
Special Provision(s):
Packaging Exception: 306
Non Bulk Packaging: 302
Bulk Packaging: 302,314
Maximimum Quanity in Passenger Area: FORBIDDEN
Maximimum Quanity in Cargo Area: 150 KG
Stow in Vessel Requirements: E
Requirements Water/Sp/Other: 40,57

IMO Detail Information

IMO Proper Shipping Name: HYDROGEN, COMPRESSED
IMO PSN Code: IGH
IMO PSN Modifier:
IMDG Page Number: 2148
UN Number: 1049
UN Hazard Class: 2(2.1)
IMO Packaging Group: -
Subsidiary Risk Label: -
EMS Number: 2-02
Medical First Aid Guide Number: NON

IATA Detail Information

IATA Proper Shipping Name: HYDROGEN, COMPRESSED
IATA PSN Code: NSD
IATA PSN Modifier:
IATA UN Id Number: 1049
IATA UN Class: 2.1
Subsidiary Risk Class:
UN Packaging Group:

IATA Label: FLAMMABLE GAS
Packaging Note for Passengers: FORB
Maximum Quantity for Passengers: FORB
Packaging Note for Cargo: 200
Maximum Quantity for Cargo: 150KG
Exceptions: A1

AFI Detail Information

AFI Proper Shipping Name: HYDROGEN, COMPRESSED
AFI Symbols:
AFI PSN Code: NSD
AFI PSN Modifier:
AFI UN Id Number: UN1049
AFI Hazard Class: 2.1
AFI Packing Group: N/A
AFI Label:
Special Provisions: P4
Back Pack Reference: A6.3,A6.7

HAZCOM Label Information

Product Identification: HYDROGEN, OR LIQUID HYDROGEN
CAGE: 00742
Assigned Individual: N
Company Name: AIR PRODUCTS AND CHEMICALS INC
Company PO Box:
Company Street Address1: 7201 HAMILTON BLVD
Company Street Address2: ALLENTOWN, PA 18195-1501 US
Health Emergency Telephone: 800-523-9374 (800-322-9092 IN PA)
Label Required Indicator: Y
Date Label Reviewed: 10/14/1994
Status Code: C
Manufacturer's Label Number:
Date of Label: 10/14/1994
Year Procured: N/K
Organization Code: F
Chronic Hazard Indicator: N
Eye Protection Indicator: YES
Skin Protection Indicator: YES
Respiratory Protection Indicator: N/P
Signal Word: DANGER
Health Hazard: None
Contact Hazard: Moderate
Fire Hazard: Severe
Reactivity Hazard: None

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**** SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION ****

MSDS Name: Hydrogen Peroxide Solution 6%
Catalog Numbers:
S74889
Synonyms:
Company Identification: Fisher Scientific
1 Reagent Lane
Fairlawn, NJ 07410
For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300
For International CHEMTREC assistance, call: 703-527-3887

**** SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS ****

CAS#	Chemical Name	%	EINECS#
7722-84-1	Hydrogen peroxide	6.0	231-765-0
7732-18-5	Water	Balance	231-791-2

Hazard Symbols: None Listed.
Risk Phrases: None Listed.

**** SECTION 3 - HAZARDS IDENTIFICATION ****

EMERGENCY OVERVIEW

Appearance: clear, colorless.
Caution! May cause eye and skin irritation. May cause respiratory and digestive tract irritation.
Target Organs: None.

Potential Health Effects

Eye:
Produces irritation, characterized by a burning sensation, redness, tearing, inflammation, and possible corneal injury. Vapors may cause eye irritation.

Skin:
May cause skin irritation.

Ingestion:
May cause irritation of the digestive tract.

Inhalation:
May cause respiratory tract irritation.

Chronic:
No information found.

**** SECTION 4 - FIRST AID MEASURES ****

Eyes:
Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

Skin:
Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists.

Ingestion:
If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation:

Remove from exposure to fresh air immediately. Get medical aid if cough or other symptoms appear.

Notes to Physician:
Treat symptomatically and

**** SECTION 5 - FIRE FIGHTING MEASURES ****

General Information:
As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Use water spray to keep fire-exposed containers cool. Substance is noncombustible.

Extinguishing Media:
For small fires, do NOT use dry chemicals, carbon dioxide, halon or foams. USE WATER ONLY. For large fires, flood fire area with water from a distance.

Autoignition Temperature:Noncombustible
Flash Point: Noncombustible
Explosion Limits, lower:Not available.
Explosion Limits, upper:Not available.
NFPA Rating:

**** SECTION 6 - ACCIDENTAL RELEASE MEASURES ****

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:
Use water spray to disperse the gas/vapor. Absorb spill using an absorbent, non-combustible material such as earth, sand, or vermiculite. Do not use combustible materials such as saw dust.

**** SECTION 7 - HANDLING and STORAGE ****

Handling:
Wash thoroughly after handling. Wash hands before eating. Use with adequate ventilation. Avoid contact with skin and eyes. Avoid contact with heat, sparks and flame. Avoid ingestion and inhalation.

Storage:
Keep away from heat, sparks, and flame. Keep away from sources of ignition. Do not store in direct sunlight. Store in a cool, dry, well-ventilated area away from incompatible substances.

**** SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION ****

Engineering Controls:
Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Hydrogen peroxide	1 ppm	1 ppm TWA; 1.4 mg/m3 TWA 75 ppm IDLH	1 ppm TWA; 1.4 mg/m3 TWA
Water	none listed	none listed	none listed

OSHA Vacated PELs:
Hydrogen peroxide:
1 ppm TWA; 1.4 mg/m3 TWA

Water:
No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes:
Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin:
Wear appropriate protective gloves to prevent skin exposure.

Clothing:
Wear appropriate protective clothing to prevent skin exposure.

Respirators:
Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

**** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ****

Physical State:	Liquid
Appearance:	clear, colorless
Odor:	odorless
pH:	Not available.
Vapor Pressure:	Not available.
Vapor Density:	Not available.
Evaporation Rate:	Not available.
Viscosity:	Not available.
Boiling Point:	100 deg C
Freezing/Melting Point:	0 deg C
Decomposition Temperature:	
Solubility in water:	
Specific Gravity/Density:	1
Molecular Formula:	Not applicable.
Molecular Weight:	

**** SECTION 10 - STABILITY AND REACTIVITY ****

Chemical Stability:
Decomposes slowly to release oxygen. Unstable.

Conditions to Avoid:
Incompatible materials, light, excess heat.

Incompatibilities with Other Materials:
Acids (mineral, non-oxidizing, e.g. hydrochloric acid, hydrofluoric acid, muriatic acid, phosphoric acid), acids (organic, e.g. acetic acid, benzoic acid, formic acid, methanoic acid, oxalic acid), alcohols and glycols (e.g. butyl alcohol, ethanol, methanol, ethylene glycol), aldehydes (e.g. acetaldehyde, acrolein, chloral hydrate, formaldehyde), amides (e.g. butyramide, diethyltoluamide, dimethyl formamide), amines (aliphatic and aromatic, e.g. dimethyl amine, propylamine, pyridine, triethylamine), azo, diazo, and hydrazines (e.g. dimethyl hydrazine, hydrazine, methyl hydrazine), carbamates (e.g. carbanolate, carbofuran), cyanides (e.g. potassium cyanide, sodium cyanide), dithiocarbamates (e.g. ferbam, maneb, metham, thiram), esters (e.g. butyl acetate, ethyl acetate, propyl formate), ethers (e.g. dioxane, furfuran, tetrahydrofuran (THF)), hydrocarbons (aromatic, e.g. benzene, chrysene, cumene, toluene), halogenated organics (e.g. dibromoethane, hexachlorobenzene, methyl chloride, trichloroethylene), isocyanates (e.g. methyl isocyanate), ketones

(e.g. acetone, acetophenone, MEK, MIBK), mercaptans and other organic sulfides (e.g. butyl mercaptan, carbon disulfide, methanethiol), metals (alkali and alkaline, e.g. cesium, potassium, sodium), metals as powders (e.g. hafnium, raney nickel), metals as non-powders (e.g. brass, bronze, iron), nitrides (e.g. potassium nitride, sodium nitride), nitriles (e.g. acetonitrile, methyl cyanide), nitro compounds (organic, e.g. nitrobenzene, nitroglycerine, picric acid, trinitrotoluene), hydrocarbons (aliphatic, unsaturated, e.g. cyclopentene, ethylene, heptene), hydrocarbons (aliphatic, saturated, e.g. butane, heptane, isooctane), peroxides and hydroperoxides (organic, e.g. acetyl peroxide, benzoyl peroxide, butyl peroxide, methyl ethyl ketone peroxide), phenols and cresols (e.g. carbolic acid, creosote, cresol, phenol, resorcinol), organophosphates, phosphothioates (e.g. methylparathion, parathion, phorate, thionazin), sulfides (i.

Hazardous Decomposition Products:
Oxygen.

Hazardous Polymerization: Will not occur.

**** SECTION 11 - TOXICOLOGICAL INFORMATION ****

RTECS#:
CAS# 7722-84-1: MX0887000 MX0890000 MX0899000 MX0899500 MX0900000
CAS# 7732-18-5: ZC0110000

LD50/LC50:
CAS# 7722-84-1: Inhalation, rat: LC50 = 2 gm/m3/4H; Oral, mouse: LD50 = 2 gm/kg; Oral, rabbit: LD50 = 820 mg/kg; Oral, rat: LD50 = 1518 mg/kg; Oral, rat: LD50 = 910 mg/kg; Oral, rat: LD50 = 376 mg/kg; Skin, rat: LD50 = 3 gm/kg; Skin, rat: LD50 = 4060 mg/kg.
CAS# 7732-18-5: Oral, rat: LD50 = >90 mL/kg.

Carcinogenicity:
Hydrogen peroxide -
ACGIH: A3 - Animal Carcinogen
IARC: Group 3 carcinogen
Water -
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

Epidemiology:
No data available.

Teratogenicity:
No data available.

Reproductive Effects:
No data available.

Neurotoxicity:
No data available.

Mutagenicity:
No data available.

Other Studies:
None.

**** SECTION 12 - ECOLOGICAL INFORMATION ****

Ecotoxicity:
Fingerling trout, >40 ppm/48H is toxic. Fathead minnow LC50=22-35 gm/L/96H

**** SECTION 13 - DISPOSAL CONSIDERATIONS ****

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste.
US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate

classification.
RCRA P-Series: None listed.
RCRA U-Series: None listed.

**** SECTION 14 - TRANSPORT INFORMATION ****

US DOT
No information available
Canadian TDG
No information available.

**** SECTION 15 - REGULATORY INFORMATION ****

US FEDERAL
TSCA
CAS# 7722-84-1 is listed on the TSCA inventory.
CAS# 7732-18-5 is listed on the TSCA inventory.
Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.
Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.
Section 12b
None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
SARA
Section 302 (RQ)
None of the chemicals in this material have an RQ.
Section 302 (TPQ)
CAS# 7722-84-1: concentration > 52%: TPQ = 1000 pounds; RQ = 1000 pounds
SARA Codes
CAS # 7722-84-1: acute, flammable.
Section 313
No chemicals are reportable under Section 313.
Clean Air Act:
This material does not contain any hazardous air pollutants.
This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.
Clean Water Act:
None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.
OSHA:
CAS# 7722-84-1 is considered highly hazardous by OSHA.
STATE
Hydrogen peroxide can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.
Water is not present on state lists from CA, PA, MN, MA, FL, or NJ.
California No Significant Risk Level:
None of the chemicals in this product are listed.
European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols: Not available.
Risk Phrases:
Safety Phrases:
WGK (Water Danger/Protection)
CAS# 7722-84-1: 0
CAS# 7732-18-5: No information available.

United Kingdom Occupational Exposure Limits
CAS# 7722-84-1: OES-United Kingdom, TWA 1 ppm TWA; 1.4 mg/m3 TWA
CAS# 7722-84-1: OES-United Kingdom, STEL 2 ppm STEL; 2.8 mg/m3 STEL
CAS# 7722-84-1: OES-United Kingdom, STEL 2 ppm STEL; 2.8 mg/m3 STEL

Canada
CAS# 7722-84-1 is listed on Canada's DSL List.
CAS# 7732-18-5 is listed on Canada's DSL List.
WHMIS: Not available.
CAS# 7722-84-1 is listed on Canada's Ingredient Disclosure List.
CAS# 7732-18-5 is not listed on Canada's Ingredient Disclosure List.

Exposure Limits
CAS# 7722-84-1: OEL-AUSTRALIA:TWA 1 ppm (1.5 mg/m3)
OEL-BELGIUM:TWA 1 ppm (1.4 mg/m3)
OEL-DENMARK:TWA 1 ppm (1.4 mg/m3)
OEL-FINLAND:TWA 1 ppm (1.4 mg/m3);STEL 3 ppm (4.2 mg/m3)
OEL-FRANCE:TWA 1 ppm (1.5 mg/m3)
OEL-GERMANY:TWA 1 ppm (1.4 mg/m3)
OEL-THE NETHERLANDS:TWA 1 ppm (1.4 mg/m3)
OEL-THE PHILIPPINES:TWA 1 ppm (1.4 mg/m3)
OEL-SWITZERLAND:TWA 1 ppm (1.4 mg/m3);STEL 2 ppm (2.8 mg/m3)
OEL-TURKEY:TWA 1 ppm (1.4 mg/m3)
OEL-UNITED KINGDOM:TWA 1 ppm (1.5 mg/m3);STEL 2 ppm (3 mg/m3)

**** SECTION 16 - ADDITIONAL INFORMATION ****

MSDS Creation Date: 2/10/1998 Revision #2 Date: 8/02/2000

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages.

FLD 25 WORKING AT ELEVATION/FALL PROTECTION

(Final Revision 11/10/1999)

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GENERAL

This procedure establishes the minimum requirements for elevated work/fall prevention for WESTON operations.

Requirements listed in this procedure are not all-inclusive but are general requirements for ensuring safe elevated work. Should use of these guidelines be impractical or create a greater hazard, then assess the task and conditions to select alternative hazard control measures. Alternative control measures shall be evaluated by the appropriate hazard review (pre-task hazard review, activity hazard analysis). The Site Health and Safety Coordinator (SHSC) must approve alternative fall control measures prior to beginning work.

Exposures to fall hazards shall be managed by reducing the number of workers exposed, relocating equipment/work areas, use of a positioning device, or by choosing different equipment options (i.e., choosing an aerial lift rather than a ladder of scaffold).

This procedure does not apply to emergency response activities such as fire fighting, emergency rescue, or spill situations where compliance is not feasible or increases the overall hazard associated with the response.

REFERENCES

29 CFR 1910 Subpart D, *Walking-Working Surfaces*
29 CFR 1926; Subpart M, *Fall Protection;* Subpart L, *Scaffolds*

ATTACHMENTS

A, Definitions/Acronyms

RESPONSIBILITY

Line management is responsible for ensuring fall protection procedures are implemented and followed in their areas of responsibility. Site specific fall protection programs must be implemented with responsibility delegated to project management, site management, workers, subcontractors, vendors, and client representatives.

General Guidelines

Work performed at elevation where there is a risk of injury due to falls, will be performed in accordance with the following general guidelines:

1. Activities with potential fall hazards shall be identified as part of the pre-job planning hazard assessment process.

2. Fall hazards shall be mitigated by the installation of standard guardrails, stairs, walls or other barriers. Fall hazards shall be mitigated during the design or pre-planning phase on all new equipment/facility design.

3. Exposure to fall hazards shall be managed by reducing the number of workers exposed, relocating equipment/work area, use of a positioning device, or by choosing different equipment options (i.e., choosing an aerial lift rather than a ladder or scaffold).

4. Activities with fall hazards not mitigated by installation of standard guardrails, walls, or other barriers shall be protected by the use of fall protection equipment or safety monitoring system and documented by an approved procedure, work permit, or equivalent document.

5. Equipment (aerial lifts, ladders, body harnesses, lanyards, etc.) shall be visually inspected by trained workers or the SHSC prior to each use. Defective equipment shall be tagged, removed from service immediately, and the Site Supervisor notified.

6. The SHSC shall:

   - Review and approve selected fall protection equipment or alternative fall hazard control measures for unusual circumstances or for the use of fall protective equipment not previously approved

   - Perform periodic assessments of operations to evaluate performance and assure compliance with this Elevated Work/Fall Prevention Procedure.

   - Provide technical guidance and regulatory interpretations to ensure consistent and compliant implementation of this program.

   - Provide comments on and communicate changes in fall prevention regulations.

7. Site Management will:

   - Ensure an adequate supply of standard fall protection equipment is available for issue.

   - Ensure new portable ladders and fall protection equipment are inspected prior to placing them in service.

Fixed Industrial Stairs

1. Fixed stairs shall:

   - Be provided for access from one structure level to another where operations necessitate regular travel between levels, and for access to operating platforms at any quipment which requires routine attention.

   - Be provided where access to elevations is for such purposes as gauging, inspection, regular maintenance, etc., where such work may expose workers to equipment hazards, other harmful substances, or for when carrying of tools or equipment by hand is normally required. Winding stairways may be installed on tanks and similar round structures where the diameter of the structure is not less than five (5) feet.

   - Be designed and constructed to carry a load of five times the normal live load anticipated but never of less strength than to carry safely a moving concentrated load of 1,000 pounds.

- Have a minimum width of 22 inches.

- Be installed at angles to the horizontal of between 30 degrees and 50 degrees. Any uniform combination of rise/tread dimensions may be used that will result in a stairway at a angle to the horizontal within the permissible range.

- Have stair treads of non-slip finish. Welded bar grating treads without nosings are acceptable providing the leading edge can be readily identified by workers descending the stairway and provided tread is serrated or is of definite non-slip design. Rise height and tread width shall be uniform throughout any flight of stairs including any foundation structure used as one or more treads of the stairs.

- Have stairway platforms of no less than the width of a stairway and a minimum of 30 inches in length measured in the direction of travel.

- Have standard railings provided on the open sides of all exposed stairways and stair platforms. Handrails shall be provided on at least one side of a closed stairway, preferably on the right side when descending.

- Have vertical clearance above any stair tread to an overhead obstruction of at least seven (7) feet, measured from the leading edge of the tread.

Ladders

1. Ladders shall:

   - Be maintained in good condition at all times.

   - Be inspected by workers prior to each use to verify that:

     a) All hardware and fittings are securely attached, and the movable parts operate freely without binding or undue play;
     b) Ladder rungs are free from grease, oil, mud, and other materials;
     c) Ladder safety feet and other auxiliary equipment are in good condition; and
     d) The ladder does not have any broken or missing steps, rungs, cleats, broken side rails, or any other faulty equipment.

   - Not be used with damaged or faulty components and shall be tagged with the appropriate accident prevention tag and removed from service immediately. Improvised repairs shall not be made to any ladder.

   - Be re-inspected following competent repairs and approval, the SHSC shall remove the tag identifying the ladder as defective.

   - Be used only for their intended purpose (to ascend and descend levels).

   - Not be fastened or tied together. The SHSC shall approve any modification of ladders for use in special purpose applications. WESTON considers ladders as an elevating device only

and the Site Manager must approve any work from ladders. Workers must remain within the confines of the ladder and maintain a three-point contact (2 feet and 1 hand) with the ladder for any task approved by the SHSC.

- Be used by only one person at a time. Ladders designed for fire department use and tested accordingly may be used by more than one person if the emergency situation dictates such use.

- Be placed so that the base section has a secure and level footing. The structure supporting the top of the ladder shall have ample strength to support the load, and the area around the bottom and top of the ladder shall be free of obstacles.

- Be supported at top of a window opening only with a board attached across the window to provide firm support against the building walls or window frames.

- Have adjustments made while standing at the base of the ladder. Locks shall be properly engaged prior to use. Adjustments shall not be made from above the locking device or while the worker is on the ladder

- Have two-section extension ladders minimum overlap as follows:
  - Up to and including 36 feet, 3 feet
  - Over 36 feet up to and including 48 feet, 4 feet
  - Over 48 feet up to and including 60 feet, 5 feet

- Be constructed of fiberglass when used in locations where they may come into contact with electrical conductors.

- Be painted or otherwise treated to resist corrosion on fixed metal ladders and appurtenances installed in pits, under floors, and in other corrosive environments. Fixed ladders shall be designed and installed in accordance with 29 CFR 1910.27.

- Be treated with a clear, nonirritating preservative on fixed wooden ladders, when used under conditions where decay may occur.

- Be coated with a clear wood preservative for protection against elements and splinters on all wooden ladders.

- Not be constructed of wood if used in radiological areas (for ease of decontamination and waste minimization).

- Be checked by the Site Supervisor to ensure fixed ladders are designed and fabricated in accordance with applicable requirements.

The Site Supervisor shall consult with the SHSC for design requirements of ladders. The Site Supervisor assures inspections and/or tests of ladders, elevated work platforms, body belts, safety harnesses, etc., are conducted in accordance with applicable requirements.

Straight and extension ladders shall be placed at a 4 : 1 pitch to prevent slipping, shall extend 3 feet above supporting surface, shall be tied off, or be held by another worker. Doors must be blocked, locked, or guarded before placing a ladder in front of them. Workers climbing or descending ladders are not required to use fall protection equipment.

Scaffolds

1. Scaffolds shall be furnished for work that cannot be done safely from the ground, from solid construction, from fixed or portable ladders, or from elevating work platforms. Scaffolds shall be constructed and erected under the supervision of a competent person in accordance with the requirements of applicable standards 29 CFR 1910.28, 1910.29 or 1926 Subpart L.

2. The footing or anchorage for scaffolds shall be sound, rigid, and capable or carrying the maximum intended load without settling or displacement. Unstable objects such as barrels, boxes, loose brick, or loose concrete blocks shall not be used to support scaffolds or planks.

3. The frames shall be placed one on top of the other with coupling or stacking pins to provide proper vertical alignment of the legs.

4. Where uplift may occur, panels shall be locked together vertically by pins or other equivalent suitable means.

5. Scaffolds and their components shall be capable of supporting without failure at least four times the maximum intended load. All planking shall be scaffold grades or equivalent and shall overlap 12 inches or be secured.

6. A guardrail system and toeboards shall be installed on all open sides and ends of scaffold platforms more than 10 feet above the ground or adjacent floor.

7. When physical structure or conditions will not permit the use of guardrails on such, scaffolds, workers shall be protected by a safety harness with lanyard and/or lifeline attached to a qualified anchorage point above the point of operation.

8. An access ladder or other safe access to scaffolds shall be provided. Where workers are required to work or pass under the scaffold, scaffolds shall be provided with a screen between the toeboards and the guardrail consisting of No.18 gage wire, one-half mesh or equivalent.

9. Working from single-point suspension scaffolds, two-point suspension scaffolds, or float or ship scaffolds, workers shall be protected by the use of a safety harness with lanyard and lifeline securely attached to substantial members of the structure or to securely rigged lines, in addition to the use of guardrails.

10. Working from a needle beam scaffold 20 feet or more above the ground or adjacent floor, and working with both hands, workers shall be protected by a safety harness with lanyard and/or lifeline attached to a substantial member of the structure or to securely rigged lines, in addition to the use of guardrails.

Stationary Work Platforms

1. Permanent Work Platforms

   a) All permanent work platforms 4 feet or more above the ground or adjacent floor shall be protected on all unprotected sides and edges by a guardrail system, except where there is an entrance to a ramp, stairway, or fixed ladder. The section of this document titled Special Surfaces or Structures describes additional exceptions to this requirement.

   b) Regardless of height, unprotected sides and edges of permanent work platforms above or adjacent to dangerous equipment (i.e., pickling tanks, degreasing units, etc.) shall be protected by a guardrail system and toe board.

   c) Platforms and the structural elements that support the platform shall be designed in accordance with appropriate engineering standards to comply with 29 CFR 1910.23.

2. Other Stationary Work Platforms

   Personnel performing work from platforms not meeting the design requirements of permanent work platforms shall be protected by one of the following methods:

   a) The use of a guardrail system;

   b) The use of personal fall protection, such as a body harness and lanyard or lifeline;

   c) For platform surfaces with a slope from the horizontal of 10 degrees or less, such as the top of large equipment housings, workers may also be protected by the use of designated area warning lines or restraint lines where it can be demonstrated that workers are not exposed to fall hazards and the work is of a temporary nature.

Elevating Work Platforms

1. General

   a) The operators of elevating work platforms shall be qualified, by appropriate training or, by an approved training institute, as an operator for the equipment they operate.

   b) The work platform shall be constructed to adequately support its rated load under any position of loading.

   c) Each platform shall bear a manufacturer's load rating plate, conspicuously posted, stating the maximum permissible rated load.

   d) Platforms shall be furnished with a guardrail system. Open spaces between the intermediate guardrail and platform toeboards on the working side, and between the top guardrail and the toeboards on all other sides of the platform, shall be provided with a screen or mesh that will reject a 1 inch ball and that is capable of withstanding a 100 pound load applied over a 144 square inch area when workers are exposed below the platform.

e) The platform flooring shall be of nonskid type.

f) Where access gates are provided, they shall be self-closing, self-locking and open inwards.

g) Safe work practices, such as remaining within the confines of the guardrail system during work operations, are essential for the protection of workers.

2. Vertical Lift Type Platforms:

When working within the confines of the platform on a "Vertalift" or similar equipment, workers are not required to be restrained by a harness and lanyard, provided the platform has a properly designed guardrail system and was not designed for fall protection anchorage by the manufacturer.

3. Elevating and Rotating Platforms:

a) Workers shall always stand firmly on the floor of the basket and shall not sit or climb on the edge of the basket or use planks, ladders, or other devices for a work position.

b) A body harness shall be worn and a lanyard attached to the manufacture's designated attachment points on the boom or basket when working from an aerial lift.

c) Workers shall not tie off to an adjacent pole, structure, or equipment while working from an aerial lift.

Powered Industrial Truck Platforms

a) Work platforms, which are attached to powered industrial trucks, shall meet the design and construction requirements of ANSI/AMSE B56.1 Paragraph 7.35.

b) The platform shall be secured to the lifting carriage of the industrial truck's forks in accordance with the manufacture's instructions.

c) The worker shall be protected from the moving parts of the industrial truck, and overhead protection as necessary by operating conditions.

d) When operating controls are available at the elevating platform all other controls shall be rendered inoperable, except that emergency lowering controls shall be provided at the ground level, and means shall be provided whereby workers on the platform can shut off the power to the truck. Alternately, an operator shall remain stationed at the controls while platform work is performed.

e) The minimum width of the platform shall be 18 inches x 18 inches.

f) Working 4 or more feet above the adjacent floor or ground, workers shall be protected by a guardrail system or a fall arrest system.

g) Trucks shall remain stationary while workers are in an elevated position.

Crane or Derrick Suspended Personnel Platforms

a) Using a crane or derrick to hoist workers shall be considered a critical lift, and all applicable provisions and requirements of WESTON's Hoisting and Rigging Procedure shall be met.

b) The worker platform, if fabricated on site, shall be designed by a qualified engineer or a qualified person competent in structural design. If a platform is purchased or leased, a qualified person shall perform an approval inspection prior to use.

c) Working from a boatswain's chair, workers shall be protected by a safety harness with lanyard and/or lifeline securely attached to a substantial member of the structure, or to securely rigged lines separate from the chair support system. When a boatswain's chair is used from a crane, the lift requirements in 29 CFR 1926.550 (g) are applicable.

Roofs

1. General

The Site Supervisor ensures the structural integrity of the facility's roof is verified by a qualified engineer, if there is any question about its ability to support planned work activities, prior to allowing workers to access the roof.

Workers performing activities that may affect the structural integrity of the roof shall have the approval of the building operator/manager prior to accessing the roof. Access to roof should be limited to only those workers necessary to perform the assigned task, and roofs shall not be accessed after dark without adequate lighting.

Work permits, fall protection systems, warning lines, controlled access zones, and safety monitoring systems shall be used. When these methods are infeasible, a fall protection plan may be developed and used in accordance with Appendix E of 29 CFR 1926.502.

Whenever possible, workers must stay on walk-boards. If walk-boards are installed at locations that are less than 6 feet from the edge of the roof, then an alternate route must be used and the situation must be reported to the appropriate supervisor.

Any recognized roof damage or leaks must be reported to the Site Supervisor.

Low-Pitched Roof Work

a) Workers performing inspection or investigation activities on low-pitched roofs with a ground-to-eave height greater than 6 feet shall be protected from falling at unprotected sides or edges by maintaining a minimum distance of 6 feet from the edge. Workers within 6 feet of an unprotected edge shall be protected by using a body belt and restraining line or a body harness with lanyard and/or lifeline.

b) Workers performing repair, service, maintenance, or other hands-on work activities on low-pitched roofs with a ground-to-eave height of 6 feet or more, shall be protected from falling by one of the following:

- The use of a guardrail system in accordance with 29 CFR 1926.502 (b).
- The use of a body belt and restraint line or a body harness with lanyard and/or lifeline,

NOTE: A body belt shall not be used as a fall arresting device. Body belts may be used in conjunction with a restraint line to prevent a worker from being exposed to a fall hazard.

- The use of designated area warning lines erected around all sides of the work area. The warning line shall be erected not less than 6 feet from the unprotected edge when mechanical equipment is not being used and not less than 10 feet from the edge when mechanical equipment is being used, or the use of a safety monitoring system on roofs 50 feet or less in width, where mechanical equipment is not being used or stored.
  Use of the safety monitoring system must have prior approval of safety.

c) When mechanical equipment is being used, the warning line shall be erected not less than 6 feet (1.8 m) from the roof edge which is parallel to the direction of mechanical equipment operation, and not less than 10 feet (3.1 m) from the roof edge which is perpendicular to the direction of mechanical equipment operation.

d) Each worker in a hoist area shall be protected from falling 6 feet (1.8 m) or more to lower levels by guardrail systems or personnel fall arrest systems. If guardrail systems or portions thereof, are removed to facilitate the hoisting operation and a worker must lean through the access opening or out over the edge of the access opening that worker shall be protected from fall hazards by a personal fall arrest system.

When guardrail systems are used at hoisting areas, a minimum of 4 feet of guardrail shall be erected on each side of the access point through which materials are hoisted. A chain or gate shall be placed across the opening between the guardrail sections when hoisting or material handling operations are not taking place. When guardrails are used at conduit, duct, chase way, or pipe outlets, a minimum of 4 feet of guardrail shall be erected on each side of the conduit, duct, chase way, or pipe.

When personal fall arrest systems are used, they shall not be attached to the hoist.

Other Roof Work

Workers on a roof 6 feet or more from the ground to eaves and with a pitch of greater than three in twelve without a parapet (roof edge wall) shall be protected by:

- A substantial catch platform installed below the working area, extending 2 feet beyond the projection of the eaves and provided with a guardrail system, or
- The use of personal fall protection consisting of a body harness and lanyard or lifeline.

Special Surfaces or Structures

1. A qualified engineer will evaluate the structural integrity of facilities and anchorage points upon request of responsible site/facility supervision.

2. A safety harness with appropriate lanyard and/or lifeline shall be used where workers are subject to a fall of 4 feet or greater unless otherwise allowed (i.e., roof work and construction activities must be protected at 6 feet or above and work from incomplete scaffolds must be protected at 10 feet or above). A safety belt may be used as a fall restraint device (i.e., a safety belt with a restraint line may be used to prevent a worker from reaching the edge of a platform or roof; a safety harness with lanyard and/or lifeline shall be used if the worker could fall over the edge).

3. Workers accessing elevated structures (i.e., radio towers, meteorological towers, and water towers) shall be provided with and use fall protection equipment at all times while on these structures.

4. Guardrails are not required on the working side of loading platforms such as loading docks where the presence of guardrails would prevent the performance of work.

5. Tanker trucks shall be accessed by one of the following methods:

   a) Unloading Station Platform:

      The working side of loading rack platforms used for access tank cars, tank trucks, or similar equipment are not required to have guardrails. Work performed while on the platform will not require additional levels of fall protection provided that a tanker is positioned by the platform and the worker does not leave the surface of the platform itself. It is understood that at times a worker will lean against the valve structure or place one hand on the tanker in some manner to open a hatch or loosen a bolt. If the worker moves off the platform surface completely and stands, or is committed to only the tanker body, or a top mounted platform on the tanker, away from the unloading platform, then additional fall protection measures must be put into place.

   b) Tankers with Fixed Ladders:

      When climbing, three points of contact (two legs/one hand, or two hands/one leg) shall be maintained. Tools, instruments, sample containers, or other objects not carried on a belt that would require "hand carrying" will be raised and lowered by a rope or a bag attached to a rope. After reaching the desired position of the ladder, both feet must be firmly planted on the ladder rung. Tasks that do not require excessive leverage or torquing (potential to slip if objects break free) do not require the worker to lean or reach beyond normal arm extension with both feet on the ladder rung, and do not require leaning outside the vertical plane of theladder's vertical rails may be performed. Work involving the use of both hands should be as brief and simple in task sequence as possible. Extended work such as maintenance, replacement of hatch components, work involving powered tools, and levels or work greater than stated above may require additional fall protection requirements on a case by case basis.

c) Tankers with Elevated Catwalks or Runways:

Access to hatches shall be targeted to the tanker's center hatches were practical. Travel to the ends of the runways shall require prior notice to supervision to determine if additional fall protection is required for the task.

6. Motor vehicle repair pits over 4 feet but less than 10 feet deep need not be protected by a fall protection system provided access to within 6 feet of the unprotected edge is limited to workers assigned to the work area, and these workers are trained to recognize and avoid the hazard.

Safety Belts, Harnesses, Lanyards, and Lifelines

1. The construction of this equipment shall comply with requirements set forth in ANSI A10.14, *American National Standard for Safety Belts, Harnesses, Lanyards, Lifelines, and Drop Lines for Construction and Industrial Use* and ANSI Z359.1, *Safety requirements for Personal Fall Arrest Systems, Subsystems, and Components.*

2. Each belt and harness assembly shall bear identification marks that identify the manufacturer. The identification shall also bear the date of manufacture and "ANSI A10.14" or "ANSI Z359.1" for general industry class C.

3. Each belt, harness, lanyard, and lifeline assembly shall be visually inspected for defects prior to each use.

4. Each belt and harness assembly shall be inspected, according to the manufacturer's recommendations, and tagged by the appropriate quality control organization when initially received and at least once annually. Faulty equipment shall not be used and shall be tagged as defective.

5. Body belts (safety belts) may only be used in conjunction with a restraint line to prevent a worker from reaching the edge of a roof/elevated platform. Body belts shall not be used as part of a fall arrest system.

6. The harness, lanyard, and lifeline assembly shall be installed to prevent a worker from free falling for more than 6 feet or striking a lower surface or object before the fall is arrested. This is especially important when utilizing shock-absorbers which can elongate as much as 3-1/2 feet during the shock-absorption process.

7. Personal fall protection equipment (harnesses, lanyard, lifelines, etc.) subjected to an arresting fall or a shock load shall not be reused. Return personal fall protection equipment to the appropriate quality control organization if an actual fall situation is experienced.

8. Fall arrest systems shall be tested as complete systems. Only components that are fully compatible with one another shall be used together.

9. Anchorage used for attachment of personal fall arrest equipment shall be capable of supporting at least 5,000 pounds per worker attached. Anchorage for suspended platforms (Boatswain chair, two point suspended scaffold, etc.) shall be independent of any anchorage being used to support or suspend the platform from which work is being performed.

10. Anchorage points for positioning devices which automatically limit free fall distances to 2 feet or less shall be capable of supporting at least twice the potential impact load of an worker's fall or 3000 pounds, whichever is greater.

11. Snaphooks shall be a double locking type.

Standard Equipment

Standard fall protection equipment has been approved for use and is available through Procurement under "Fall Protection Devices." Safety shall approve use of fall protection equipment not available through Procurement prior to use. Additions and deletions to equipment available through Procurement will be made as necessary.

TRAINING

1. Workers performing elevated work shall be trained in accordance with 29 CFR 1926.503, *Training Requirement.*

2. Workers required to use personal protective equipment will be instructed on its proper use and limitations and demonstrate proficiency.

3. Retraining shall be conducted when:

   a) Changes in the workplace render previous training obsolete;

   b) Changes in the types of fall protection systems or equipment to be used render previous training obsolete; or

   c) Inadequacies in an affected worker's knowledge or use of fall protection systems or equipment indicate that the worker has not retained the necessary understanding or skill.

4. Supervisors shall be trained to recognize hazards of elevated work and trained in procedures to be followed to minimize these hazards.

5. A written certification record shall be prepared with the name of workers trained, the date(s) of training, and the signature of the person who conducted the training. This written certification record shall be forwarded to the WESTON safety person responsible for that project.

RECORDS

All records, including hazard assessment certifications, permits, training, and medical evaluations shall be maintained in accordance with WESTON requirements at the project office.

Attachment A

Definitions/Acronyms

Anchorage Point:A secure point of attachment for lifelines, lanyards, or deceleration devices. Anchorage shall be capable of supporting at least 5000 pounds per worker attached (3000 pounds if positioning devices are used which automatically limit free fall distance to 2 feet or less), or shall be designed, installed, and used as part of a complete personal fall arrest system which maintains a safety factor of at least 2, under the supervision of a qualified person.

Aerial Device: Any vehicle mounted device, telescoping or articulating, or both, used to position personnel.

Body Belt (safety belt): A strap with means for securing it around the waist or body and for attaching it to a restraint line. Body belts shall not be used as part of a fall arrest system.

Body Harness: A design of straps secured to the worker in a manner so as to distribute the arresting forces over at least the thighs, shoulders, and pelvis, with provisions for attaching a lanyard, lifeline, or deceleration device.

Connector: A device which is used to couple (connect) parts of the personal fall arrest system and positioning device systems together. It may be an independent component of the system, such as a carabiner , or it may be an integral component of part of the system (such as a buckle or D ring sewn into a body belt or body harness, or a snap-hook spliced or sewn to a lanyard or self-retracting lanyard).

Competent Person: One who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to personnel and who has authorization to take prompt corrective measures to eliminate them.

Deceleration Device: Any mechanism, such as a rope grab, rip-stitch lanyard, specially-woven lanyard, tearing or deforming lanyards, automatic self-retracting lifelines/lanyards, etc., which serves to dissipate a substantial amount of energy during a fall arrest, or otherwise limit the energy imposed on an employee during fall arrest.

Designated Area: The area of a low pitched roof, designated by the erection of warning lines, where work may take place without the use of guardrail, body belt, or safety net systems to protect employees in the area.

Elevating Work Platforms: Any number of vehicle-mounted or portable and extendable work platforms including, but not limited to, aerial devices, boom platforms, telescoping derricks, articulating booms, vertical lifts, and suspended and powered personnel platforms.

Elevated Work: Inspection, service, repair, maintenance, and other activities performed on an open-sided floor, platform, roof or other walking-working surface 4 feet or more above the ground or adjacent floor.

Fall Protection: Systems, fixtures, and/or devices that prevent workers from falling from one elevation to a level below.

Fall Restraint: Systems, fixtures, and/or devices that limit the motion of workers to prevent falling from elevated work areas.

Guardrail System: A vertical barrier, normally consisting of, but not limited to, an assembly of top rails, mid-rails, toeboards, and posts, erected to prevent personnel from falling to a lower level.

Ladder: A device used to gain access to a different elevation, consisting of two or more structural members crossed by rungs, steps, or cleats. It includes stepladders, extension ladders, mobile ladder stands, and fixed ladders.

Lanyards: A minimum of one-half inch diameter nylon or equivalent rope fastened to a safety belt or harness with a snap or shock absorber on the free end a maximum length to provide protection against a fall of no greater than 6 feet and capable of supporting a minimum of 5000 pounds.

Lifeline: A flexible line for connection to an anchorage (fixed support) at one end to hang vertically, or to stretch horizontally between two anchorage, that serves as a means of connecting other components of the fall protection system. Vertical lifelines shall be capable of supporting a minimum of 5000 pounds.

Low-pitched Roof: A roof having a slope of three in twelve or less from horizontal.

Mechanical Equipment: All motor or human propelled wheeled equipment except for wheelbarrows and mop carts.

Motion Stopping Safety Systems: A fall protection system using the following equipment singly or in combination: standard railing (guardrails), scaffolds or platforms with standard guardrails, or safety belt with restraint line.

Parapet: A low wall at the edge of a roof or balcony. Parapet must be a minimum of 39 inches in height and capable of withstanding a load of at least 200 pounds applied in any direction at any point on the wall to be considered as adequate fall protection.

Permanent Work Platforms: A permanent elevated working surface equipped with approved handrails and toeboards, and utilized for performing work above floor or ground level.

Personal Fall Arrest System: A system used to arrest an employee in a fall from a working level. It consists of an anchorage, connectors, a body harness, and may include a lanyard, deceleration device, lifeline, or suitable combination of these.

Platform: A walking-working surface for persons elevated above the surrounding floor or ground, such as a balcony or platform for the operation of machinery and equipment. For purposes of elevated work safety, platforms are interpreted to be any elevate surface upon which personnel are required or allowed to walk or work while performing assigned tasks such as inspection, service, repair, or maintenance on a predictable and regular basis.

Positioning Device System: A body belt or body harness system rigged such that an employee cannot fall more than 2 feet, and is secured to an anchorage capable of supporting at least twice the potential impact load of an employee's fall or 3,000 pounds, whichever is greater.

Revised 11/1999

Qualified (person): A person who by possession of a recognized degree, certificate or professional standing, or who by knowledge, training and experience, has successfully demonstrated an ability to solve or resolve problems relating to the specific subject, work, product, or project.

Restraint Line: A line from an anchorage or between anchorage to which a worker is secured in such a way as to prevent the worker from walking or falling off an elevated work surface.

Rope Grab: A deceleration device, which travels on a lifeline and automatically, by friction, engages the lifeline and locks so as to arrest the fall of an employee. A rope grab usually employs the principle of inertial locking, cam/level locking, or both.

Safety Monitoring System: A safety system in which a competent person monitors the safety of all workers on an elevated work surface, and warns them when it appears to the monitor that they are unaware of the hazard or are acting in an unsafe manner. The competent person shall be on the same elevated surface and/or within visual sighting distance of the workers, and must be close enough to verbally communicate with the workers. *(Use of the safety monitoring system requires prior approval of Safety.)*

Scaffold: Any temporary elevated platform and its supporting structure used for supporting workers or material, or both.

Boatswain's Chair: A seat supported by slings attached to a suspended rope, designed to accommodate one worker in a seated position.

Float or Ships Scaffold: A scaffold hung from overhead supports by means of ropes and consisting of a substantial platform having diagonal bracing underneath, resting upon and securely fastened to two parallel plank bearers at right angles to the span.

Needle-Beam Scaffold: A light duty scaffold consisting of needle beams supporting a platform.

Single-Point Suspension Scaffold: A manually or power operated unit designed for light duty use, supported by a single wire rope from an overhead support, arranged and operated to permit the raising or lowering of the platform to the desired working position.

Two-Point Suspension Scaffold (Swinging scaffold): A scaffold, the platform of which is supported by hangers at two points, suspended from overhead supports to permit the raising and lowering of the platform to the desired working position by tackle or hoisting mechanism.

Self-retracting lifeline/lanyard: A deceleration device containing a drum-wound line which can be slowly extracted from, or retracted onto, the drum under slight tension during normal employee movement, and which, after onset of a fall, automatically locks the drum and arrests the fall.

Snaphook: A connector comprised of a hook-shaped member with a normally closed keeper, or similar arrangement, which may be opened to permit the hook to receive an object and, when released, automatically closes to retain the object. Snaphooks shall be the locking type with a self-closing, self-locking keeper which remains closed and locked until unlocked and pressed open for connection or disconnection.

Unprotected Sides and Edges: Any side or edge of a surface, except at entrances to points of access, where there is no wall or guardrail system.

Vehicle: Any carrier that is not manually propelled.

Vertalift: A manually or mechanically operated platform which elevates workers in a vertical direction only.

Warning lines: A rope, wire, or chain, and supporting stanchions erected on low pitched roofs/work platforms to warn workers that they are approaching an unprotected roof side or edge, and which designates an area in which work may take place without the use of guardrail, body belt, or safety net systems.

ATTACHMENT B
MATERIAL SAFETY DATA SHEETS
(MSDSs)-FORM 26

ATTACHMENT C
SAFETY PROCEDURES/FIELD OPERATING PROCEDURES (FLD OPs)-FORM 27

Click here to go to the Table of Contents, Section 2 - FLDs

ATTACHMENT D
SITE-SPECIFIC HAZARD COMMUNICATION PROGRAM-FORM 28

Click ***here*** to go to Form 28

SITE-SPECIFIC HAZARD COMMUNICATION PROGRAM-FORM 28

Location-Specific Hazard Communication Program/Checklist

To ensure an understanding of and compliance with the Hazard Communication Standard, WESTON will use this checklist/document (or similar document) in conjunction with the WESTON Written Hazard Communication Program as a means of meeting site- or location-specific requirements.
While responsibility for activities within this document reference the WESTON Safety Officer (SO), it is the responsibility of all personnel to effect compliance. Responsibilities under various conditions can be found within the WESTON Written Hazard Communication Program.
To ensure that information about the dangers of all hazardous chemicals used by WESTON are known by all affected employees, the following Hazard Communication Program has been established. All affected personnel will participate in the Hazard Communication Program. This written program, as well as WESTON's Corporate Hazard Communication Program, will be available for review by any employee, employee representative, representative of OSHA, NIOSH, or any affected employer/employee on a multi-employer site.

☒ Site or other location name/address: Sybill, Inc. 111 Military St, Detroit MI

☒ Site/Project/Location Manager: Kevin Axe

☒ Site/Location Safety Officer: Ron Bugg

☒ List of chemicals compiled, format: ☒ HASP ☐ Other: _____

☒ Location of MSDS files: HASP

☐ Training conducted by: Name: _____ Date: _____

☐ Indicate format of training documentation: ☐ Field Log: ☐ Other: _____

☐ Client briefing conducted regarding hazard communication: _____

☒ If multi-employer site (client, subcontractor, agency, etc.), indicate name of affected companies:

U.S. EPA

☐ Other employer(s) notified of chemicals, labeling, and MSDS information: _____

☐ Has WESTON been notified of other employer's or client's hazard communication program(s), as necessary? ☐ Yes ☐ No

List of Hazardous Chemicals

A list of known hazardous chemicals used by WESTON personnel must be prepared and attached to this document or placed in a centrally identified location with the MSDSs. Further information on each chemical may be obtained by reviewing the appropriate MSDS. The list will be arranged to enable cross-reference with the MSDS file and the label on the container. The SO or Location Manager is responsible for ensuring the chemical listing remains up-to-date.

Container Labeling

The WESTON SO will verify that all containers received from the chemical manufacturer, importer, or distributor for use on-site are clearly labeled.
The SO is responsible for ensuring that labels are placed where required and for comparing MSDSs and other information with label information to ensure correctness.

The SO is responsible for establishing and monitoring WESTON's MSDS program for the location. The SO will ensure that procedures are developed to obtain the necessary MSDSs and will review incoming MSDSs for new or significant health and safety information. He/she will see that any new information is passed on to the affected employees. If an MSDS is not received at the time of initial shipment, the SO will call the manufacturer and have an MSDS delivered for that product in accordance with the requirements of WESTON's Written Hazard Communication Program.
A log for, and copies of, MSDSs for all hazardous chemicals in use will be kept in the MSDS folder at a location known to all site workers. MSDSs will be readily available to all employees during each work shift. If an MSDS is not available, immediately contact the WESTON SO or the designated alternate. When a revised MSDS is received, the SO will immediately replace the old MSDS.

Employee Training and Information

The SO is responsible for the WESTON site-specific personnel training program. The SO will ensure that all program elements specified below are supplied to all affected employees.
At the time of initial assignment for employees to the work site, or whenever a new hazard is introduced into the work area, employees will attend a health and safety meeting or briefing that includes the information indicated below.

- Hazardous chemicals present at the work site.
- Physical and health risks of the hazardous chemicals.
- The signs and symptoms of overexposure.
- Procedures to follow if employees are overexposed to hazardous chemicals.
- Location of the MSDS file and Written Hazard Communication Program.
- How to determine the presence or release of hazardous chemicals in the employee's work area.
- How to read labels and review MSDSs to obtain hazard information.
- Steps WESTON has taken to reduce or prevent exposure to hazardous chemicals.
- How to reduce or prevent exposure to hazardous chemicals through the use of controls procedures, work practices, and personal protective equipment.
- Hazardous, nonroutine tasks to be performed (if any).
- Chemicals within unlabeled piping (if any).

Hazardous Nonroutine Tasks

When employees are required to perform hazardous nonroutine tasks, the affected employee(s) will be given information by the SO about the hazardous chemicals he or she may use during such activity. This information will include specific chemical hazards, protective and safety measures the employee can use, and steps WESTON is using to reduce the hazards. These steps include, but are not limited to, ventilation, respirators, presence of another employee, and emergency procedures.

Chemicals in Unlabeled Pipes

Work activities may be performed by employees in areas where chemicals are transferred through unlabeled pipes. Prior to starting work in these areas, the employee will contact the SO, at which time information as to the chemical(s) in the pipes, potential hazards of the chemicals or the process involved, and the safety precautions that should be taken will be determined and presented.

Multi-Employer Work Sites

It is the responsibility of the SO to provide other employers with information about hazardous chemicals imported by WESTON to which their employees may be exposed, along with suggested safety precautions. It is also the responsibility of the SO and the Site Manager to obtain information about hazardous chemicals used by other employers to which WESTON employees may be exposed. WESTON's chemical listing will be made available to other employers, as requested. MSDSs will be available for viewing, as necessary. The location, format, and/or procedures for accessing MSDS information must be relayed to affected employees.

SITE AIR MONITORING PROGRAM FORM 29

Field Data Sheets

Location:

% LEL	% O_2	PID (units)	FID (units)	Aerosol Monitor (mg/m^3)	GM: Shield Probe/ Thin Window		NaI (uR/hr)	ZnS (cpm)
					mR/hr	cpm		

Monitox (ppm)				Detector Tube(s)				

Sound Levels (dBA)		Illumination	pH	Other	Other	Other	Other	Other

Location:

% LEL	% O_2	PID (units)	FID (units)	Aerosol Monitor (mg/m^3)	GM: Shield Probe/ Thin Window		NaI (uR/hr)	ZnS (cpm)
					mR/hr	cpm		

Monitox (ppm)				Detector Tube(s)				

Sound Levels (dBA)		Illumination	pH	Other	Other	Other	Other	Other

Revised 02/1998

AIR MONITORING/SAMPLING DATA LOG-FORM 30

Client:	W.O. No.:	Sample No.:
Address:	Sampled By:	Date:

Employee and Location Information

Employee Name:	Employee No.:	Job Title:

Respirator	☐ APR ☐ ½ Mask ☐ Full Face ☐ PAPR ☐ ½ Mask ☐ Full Face ☐ Hood ☐ SAR ☐ ½ Mask ☐ Full Face ☐ Hood ☐ SCBA	Manufacturer:	Cartridge Type:

PPE: ☐ Hard Hat ☐ HPD ☐ Gloves ☐ Safety Shoes ☐ Coveralls ☐ Other:

Sampling Data

Sampling Type: ☐ Personal ☐ TWA ☐ STEL ☐ Area ☐ Source ☐ Full Shift ☐ Partial Shift ☐ Grab	Media:	Pump Type/Serial No.: /
Calibrator/Serial No.: /	Pre-Calibration: 1. 2. 3. avg-pre:	Post-Calibration: 1. 2. 3. avg-post:

Start Time:	Restart Time:	Restart Time:	Avg. Flowrate:	% Change:
1st Stop Time:	2nd Stop Time:	3rd Stop Time:	Total Time:	Volume:

Multiple Samples for this TWA: ☐ Yes ☐ No	Multiple Chemical Exposures: ☐ Yes ☐ No	Exposure Time: ☐ Normal ☐ Worst Case

Sampling Conditions

Weather Conditions: Temp: R.H: B.P.: Other:

Engineering Controls:

Substances Evaluated

Substance	Result	Substance	Result	Substance	Result

Observations and Comments

QA by: Date

Revised 02/1998

CONTENTS LIST
FIRST AID KITS OFFICE/LABORATORY

Return to top

CONTENTS	KIT #1 < 15 EMP.	KIT #2 > 15 EMP.
BAND-AIDS		
- Adhesive Strip, 1" x 3"	20/10	50/20
- Knuckle	20/10	20/10
- Finger Tip, 1-3/4" x 2"	0	20/10
- Finger Tip, 1-7/8" x 3"	10/5	25/5
- Small Strip, 1-1/2" x 7/8"	10/5	10/5
TAPE		
- Adhesive, 1"	1/1	2/1
BANDAGES		
- Gauze (Roller type - Kerlix), 2" & 4"	1/1	2
- Wrap (Self-adhering - Cobane), 3" or 4"	1/1	2/1
- Triangular	1/1	2
- Elastic Ace Wraps, 4"	1/1	2/1
GAUZE PADS		
- 4" x 4"	5/2	10/5
- Non-Stick (Telfa-like)	5/2	10/5
DRESSINGS		
- Eye	2/1	4/1
- Compress	2/1	2/1
ANTISEPTICS/OINTMENTS		
- First Aid Cream Packs	5/3	2/1
- Burn Gel	2/1	10/1
- Hydrocortisone Packs	10/2	10/2
- Sterile Eyewash Solution	2/1	2/1
- Sterile Eye/Skin Wash Sol.	2/1	2/1
- Antiseptic Swabs and/or Betadine Swabs, Box 10	1/1	2/1
OTHER		
- Cold Packs	2/1	4/1
- Ammonia Ampoules	5/3	10/3
- Disposable Blanket	1/1	1/1
- Surgical Gloves	5/2 pr.	10/4 pr.
- CPR Shield ("Mircoshield")	2/1	2/1
- BBP Infection Control Kit	1/1	1/1
- Non-Aspirin Pain Reliever	10/5	25/10
- Goggles (Uvex Ultraspec 1000 or similar) pair	1	1

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CONTENTS LIST
FIRST AID KITS FIELD/VEHICLES

Return to top

CONTENTS	IDEAL/MINIMUM QUANTITY	
	TRUCKS/VANS	FIELD
BAND-AIDS		
- Adhesive Strip, 7/8" x 3"	20/10	50/20
- Adhesive Strip, 1-1/2" x 7/8"	10/5	50/10
TAPE		
- Adhesive 1"	1/1	2/1
BANDAGES		
- Gauze (Roller type - Kerlix), 2" & 4"	1/1	2/1
- ACE Wraps		2/1
GAUZE PADS		
- 3" x 3"	10/5	20/10
DRESSINGS		
- Eye	2/1	4/2
ANTISEPTICS / OINTMENTS		
- Burn Gel	1/0	10/5
- Sterile Eyewash Solution	1/0	1/0
- Antiseptic Swabs and/or Betadine Swabs, Box 10	1/1	2/1
OTHER		
- Ammonia Ampoules	4/2	5/2
- Surgical Gloves	2/2 pr.	5/2 pr.
- CPR Shield	1/1	2/1
- Non-Aspirin	15/10	25/10
- Insect Sting Kit (crushable ampoules)	1/1	2/1
- Alcohol-Foam Scrub - can	1/1	1/1
- Goggles (UVex Ultraspec 1000 or similar) pair	1/1	1/1

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Return to top

BLOODBORNE PATHOGNES KIT CONTENTS LIST	
1 ea.	Clean-up Absorbent Pack
1 ea.	Disposable Apron
1 pr.	Disposable Goggles/Safety Glasses
1 ea.	Protective Airway Mask
2 pr.	Latex Disposable Gloves
1 ea.	Scoop
1 ea.	Scraper
2 ea.	Red Biohazard Plastic Bags with Twist Ties
1 ea.	8 oz. Pour Bottle Chlorine Concentrate
3 ea.	Disposable Paper Towels
2 ea.	Chlorhexidine Towelettes or Equivalent
2 ea.	Germicidal Disposable Cloths
1 pr.	Disposable Shoe Covers
1 ea.	Disposable Face Mask

Use above list as a minimum requirement for Bloodborne Pathogens.

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Home | Help

MAPQUEST.

MAPS | DRIVING DIRECTIONS | ROAD TRIP PLANNER | YELLOW PAGES

driving directions

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DETROIT RECEIVING

FROM:	TO:
111 Military St Detroit, MI 48209-4102 US	4201 Saint Antoine St Detroit, MI 48201-2153 US

Total Distance: 6.12 miles **Total Estimated Time:** 10 minutes

PRINT ROUTE | SAVE ROUTE | E-MAIL ROUTE

REVERSE DIRECTIONS | DOWNLOAD ROUTE TO PDA

FASTEST ROUTE | SHORTEST ROUTE | AVOID HIGHWAYS

DIRECTIONS	DISTANCE
1: Start out going Northwest on MILITARY ST towards HUSSAR ST by turning left.	0.17 miles
2: Turn LEFT onto FORT ST W/MI-3.	0.07 miles
3: Turn RIGHT onto DRAGOON ST.	0.06 miles
4: Turn RIGHT onto FISHER FRWY W.	0.03 miles
5: Turn SLIGHT LEFT to take the I-75 N ramp.	0.16 miles
6: Merge onto I-75 N.	3.98 miles
7: Take the I-75 N/I-375 S exit towards DOWNTOWN/FLINT.	0.22 miles
8: Take the I-75 N exit on the left towards FLINT.	0.25 miles
9: Merge onto I-75 N.	0.37 miles
10: Take the exit- exit number 52- towards MACK AVE.	0.16 miles
11: Stay straight to go onto CHRYSLER DR.	0.04 miles
12: Turn LEFT onto MACK AVE.	0.28 miles
13: Turn RIGHT onto ST ANTOINE ST.	0.01 miles
14: ST ANTOINE ST becomes BEAUBIEN ST.	0.25 miles
15: BEAUBIEN ST becomes ST ANTOINE ST.	0.06 miles
Total Estimated Time:	**Total Distance:**
10 minutes	**6.12 miles**

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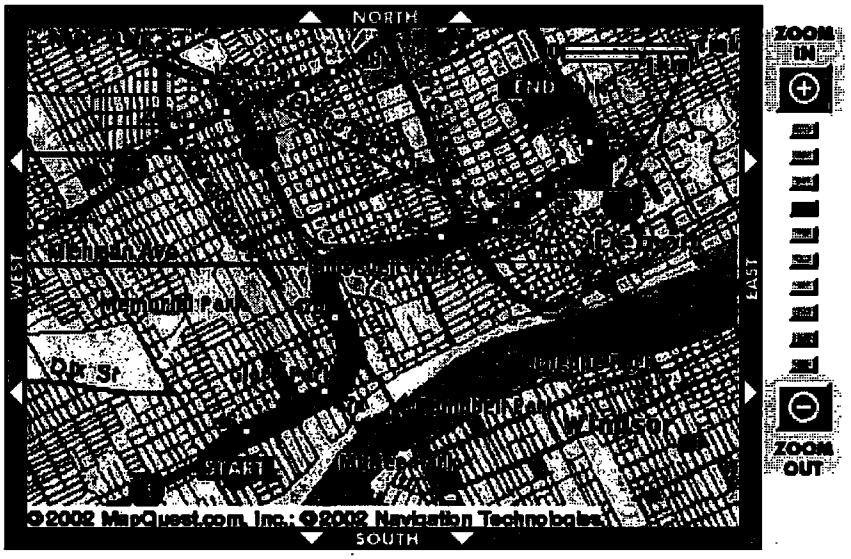
ROUTE OVERVIEW:

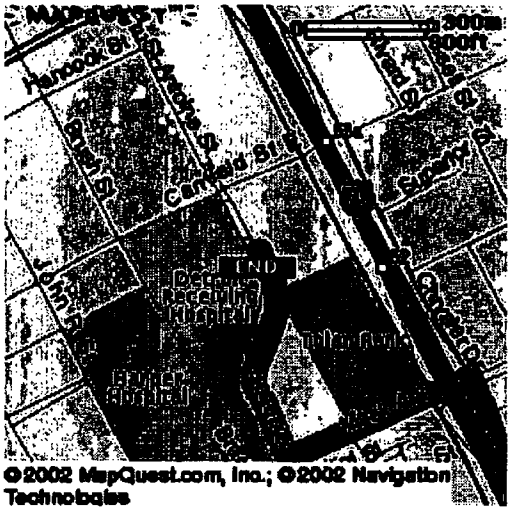


CLICKING ON MAP WILL: ○ Zoom In ◉ Re-center

Map Legend NAVTECH

DESTINATION:

4201 Saint Antoine St
Detroit, MI
48201-2153 US



Re-display Directions with:

◉ Overview Map with Text ○ Text Only ○ Turn-by-Turn Maps with Text

RE-DISPLAY ROUTE

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MAPS & DRIVING DIRECTIONS

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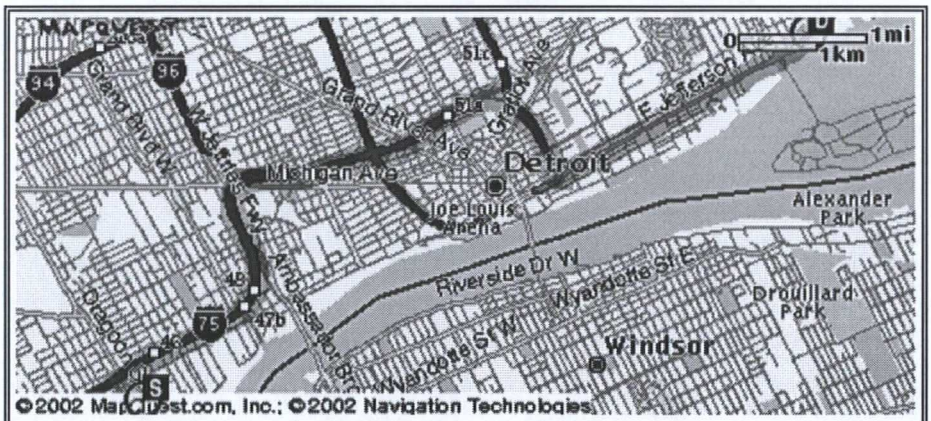
ST. JOHN RIVERVIEW HOSPITAL

DRIVING DIRECTIONS

Your directions are below.
You can also create a map or get additional driving directions.

Door to Door Directions



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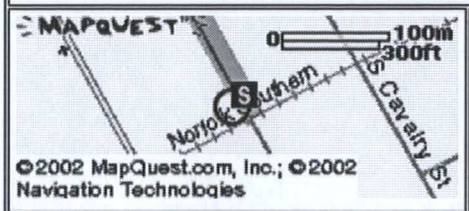

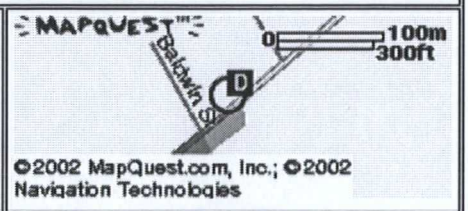

Start	Destination
111 MILITARY ROAD DETROIT, MI	7733 E. JEFFERSON DETROIT, MI

From:	111 MILITARY ROAD DETROIT, MI
To:	7733 E. JEFFERSON DETROIT, MI

Directions	**Distance**
1: Start out going Northwest on MILITARY ST towards HUSSAR ST by turning left.	0.2 miles
2: Turn LEFT onto FORT ST W.	0.1 miles
3: Turn RIGHT onto DRAGOON ST.	0.1 miles
4: Turn RIGHT onto FISHER FRWY W.	0.0 miles
5: Turn SLIGHT LEFT to take the I-75 N ramp.	0.2 miles
6: Merge onto I-75 N.	4.0 miles
7: Take the I-75 N/I-375 S exit towards DOWNTOWN/FLINT.	0.2 miles
8: Take the I-375 S exit towards DOWNTOWN.	0.2 miles
9: Merge onto I-375 S.	0.4 miles
10: Take the exit towards JEFFERSON AVE EAST.	0.1 miles
11: Stay straight to go onto CHRYSLER DR.	0.1 miles
12: Turn LEFT onto E JEFFERSON AVE.	2.3 miles

Total Distance:	7.9 miles
Estimated Time:	17 minutes

Display Options:

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Redisplay Results